SITE SELECTION PROCESS
PHASE 4A: SELECTION OF A PREFERRED SITE(S) - SOCIAL ANALYSIS

APPENDIX VOLUME 2

HERITAGE ASSESSMENT

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December, 1985

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December 3, 1985

Dr. Peter Homenuck
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Dear Dr. Homenuck:

I am pleased to submit the attached report, "Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Heritage Assessment."

The report indicates that no features of major heritage significance were identified in the study process. Nevertheless, each site and site vicinity contain unique features that should be retained if possible.

When the preferred site has been chosen, I would recommend that all heritage features should be evaluated for reuse in the proposed OWMC facility. If feature evaluation is included at the beginning of facility design, it will ensure that the best level of mitigation can be applied to all heritage features.

I trust this report will be of value in determining the optimal site for the OWMC facility. Please let me know if our firm can be of any further assistance.

Yours sincerely,

Christopher Andreae,
President

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PI-1N: Heritage Features ..... "
PI-13N: Heritage Features ..... "
LF-3C: Heritage Features ..... "
LF-9C: Heritage Features ..... "
LF-1E: Heritage Features ..... "
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EXECUTIVE SUMMARY

PURPOSE OF THE REPORT

As part of the 4A study process, the Ontario Waste Management Corporation (OWMC) required a heritage assessment of eight candidate sites that were being evaluated for an industrial waste management facility. This report identifies heritage features, assesses their significance and provides a detailed comparative evaluation of sites. The eight candidate sites are ranked from the least to most disruptive sites with regards to heritage features.

This study documented standing heritage features. Archaeological resources were examined by another consultant, the Museum of Indian Archaeology.

SCOPE AND METHOD

Heritage features in all candidate sites and site vicinities were evaluated in order to compare the potential impact of the OWMC facility on these resources. A common factor that could be measured for all areas was the heritage landscape. Heritage landscapes for the eight sites and site vicinities were examined separately and then combined to provide an overall comparison of sites.

The following study process was adopted. First, land use histories of each site and site vicinity were prepared (Appendix 3).Individual features of potential heritage significance were identified. Second, a field survey of the sites and site vicinities was conducted to locate new features and landscapes and to confirm the existence and importance of structures identified in the research phase. These results are on file with the Institute of Environmental Research (IER). Third, based on the research and field work, features and landscapes in each site

vicinity were evaluated for their heritage significance. Finally, all site and site vicinity features were ranked for their heritage landscapes. This produced a ranking of sites ranging from the least disrupted to the sites most disrupted with regards to heritage features (Section 6).*

The information and analysis prepared in this report were utilized by IER in their research.** Ranking by siting options was undertaken by IER in consultation with Historica Research Limited.

PREMISES AND POSTULATES

PREMISES:

1. That studies would address concerns and issues identified in the Environmental Assessment Act; heritage features constitute part of the cultural environment and therefore require study.

POSTULATES

1. That the location of the physical/chemical treatment plant and incinerator could be adjusted on the site but that landfill areas could not and would require removal of built heritage features.

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* During Phase 4A but after research for this report was completed the hydrogeologic consultant determined that site LF-2N failed to provide natural containment. Since this decision occurred after research for the heritage report was complete, this study includes an analysis of LF-2N although it was dropped from further consideration as a candidate site. See Gartner Lee Associates Ltd., Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Geologic, Hydrogeologic and Geotechnical Considerations, 1985 and M.M. Dillon Ltd., Site Selection Process, Phase 4A: Interim Site Selection Report. Candidate Site LF-2N, 1985.

** See: Institute of Environmental Research Inc. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Social Analysis, 1985.

2. While heritage impacts may be experienced throughout the site vicinity, the OWMC will only have control over those impacts that occur on site.

3. Significant heritage features on the preferred siting option would be further investigated during the subsequent site assessment phase.

4. The most appropriate level of mitigation would be applied to impacted heritage features.

5. The impact of the OWMC facility on historic land use can be described in the following manner:

i. if land use is not changing, the proposed activity should be compatible with current land use such that the activity will not alter the area's predominant landscape;

ii. if land use is changing, the proposed activity should be compatible with rates of change and ultimate new landscape of area;

iii. if the proposed activity does not fall into the previous categories, it should be assessed to determine if the activity will:

(a) be isolated and not create an instability in historic land use.

(b) create an instability that will result in an inappropriate new landscape. In this case the proposed facility may be undesirable.

STATUS OF DATA

For comparison of site vicinities, the significance of heritage structures was quantified. This measure permitted comparison of the eight site vicinities each containing large numbers of features. This quantification provides a relative but not absolute measure of heritage significance.

Map and documentary research indicated that all heritage features were found to be near roads. The field survey evaluated structures from the road and determined

that no site structure had to be investigated in order to develop a comparative evaluation among sites. Therefore no on site evaluation of structures was conducted.

No analysis of features was conducted beyond the site vicinity. Therefore the access routes to site vicinities were not examined.

MAIN FINDINGS

The comparison of the eight site vicinities was based on evaluating 297 heritage features (Table 6.1). Heritage features were identified on each site vicinity but no structures of major heritage significance were noted. In all cases it appears that adequate forms of mitigation exist for potentially impacted features.

Comparison of the eight candidate sites was based upon the evaluation of 43 heritage features (Table 6.7). Heritage features were identified on each site. Only one site (PI-1N) contained a building designated under the "Ontario Heritage Act."

Some information regarding impacts on heritage features was not available during Phase 4A. Specifically the impacts on heritage structures due to vehicle and process vibrations and out migration of people were common to all sites and did not affect comparison or ranking of sites.

CONCLUSIONS AND RECOMMENDATIONS

Historical research and field work revealed that no site had to be recommended for rejection based on heritage concerns.

Heritage features on the eight candidate sites have been identified for the site selection team and OWMC for planning purposes. Facility development on the preferred site should occur such that the best level of mitigation can be applied to each identified feature.

By combining evaluation factors for both candidate sites and site vicinities, Section 6.3 concluded that PI-27E was the preferred site as it contained the fewest heritage resources. Sites PI-13N and PI-1N were the least preferred

sites due to the great number of heritage resources both in the sites and site vicinities. The ranking of all nine sites, from least to most preferred, are:

PI-13N and PI-1N
LF-4N
LF-1E (integrated)
LF-2N
LF-1E (partially integrated)
LF-3C
LF-9C
PI-27E

The Phase 4A study indicated that additional work should be undertaken for the preferred siting option once it has been chosen. A detailed analysis should be undertaken of the heritage structures on the preferred site(s). As well access routes to the site should be assessed for heritage features. Data that was unavailable in Phase 4A (vibration studies, migration) should be evaluated on a site specific basis in Phase 4B.

CHAPTER 1
INTRODUCTION

1.1 BACKGROUND

Heritage features contribute to the social environment both as unique structures and as distinctive landscapes. Throughout the facility development process the Ontario Waste Management Corporation (OWMC) adopted the definition of environment from the "Environmental Assessment Act (1975)." The Act includes in its definition of the environment "any building, structure, machine or other device or thing made by man;" a definition that encompasses heritage features.

Phase 4A divided heritage features in two categories. This study was undertaken by Historica Research Limited to examine visible heritage features. A separate archaeological study was conducted by the Museum of Indian Archaeology.[1]

1.2 OWMC SITE SELECTION PROCESS

The heritage study was undertaken as part of the Phase 4A Social Analysis study conducted by the Institute of Environmental Research (IER).[2] Phase 4A is divided into four stages. (see Figure 1.1) This heritage study provided IER with information in three of the four stages.

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1) Gartner Lee Associates Ltd. and Museum of Indian Archaeology. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Archaeology, 1985

2) Institute of Environmental Research Inc. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Social Analysis, 1985.

Assessment of heritage features occurred primarily in stages one, three, and four of the facility development process. Stage One identified heritage factors that could be impacted by the OWMC facility. Data was gathered to analyze heritage factors for both the site and site vicinity. In Stage Three a detailed comparison of heritage features in the eight sites and site vicinities was conducted. Comparisons of siting options was conducted by IER in consultation with Historica Research Limited. In Stage Four specific conclusions were developed regarding the impact of the OWMC facility on heritage features. Recommendations were proposed to guide further studies in Phase 4B. Conclusions from the heritage study were incorporated into the IER study.

1.3 DEFINITIONS

In this report the terms "heritage feature" and "heritage landscape" have been given specific definitions consistent with generally accepted usage.

1.3.1 HERITAGE FEATURE

Heritage features are man-made remains of the past. These inherited features describe and define previous human activities. The term refers to any man made object on the land such as buildings, engineering works and plantings, such as windbreaks.

A heritage feature may simply be an old structure of little other importance. Conversely it may be a significant historic feature due to its architecture, landscape setting, or association with a historic event or person.

In this study heritage features were considered to be visible man-made features. Archaeological remains are sub-surface heritage features. Their assessment has been undertaken by the Museum of Indian Archaeology.

1.3.2 HERITAGE LANDSCAPE

This is the physical appearance of the land as we now see it as a result of man's modifications to the "natural" landscape. A heritage landscape, sometimes called a cultural landscape, is a collection of "heritage features." Thus, for example a farm landscape, or farmscape, may be a heritage landscape composed of individual structures such as a house, barns and outbuildings.

FACILITIES DEVELOPMENT PROCESS

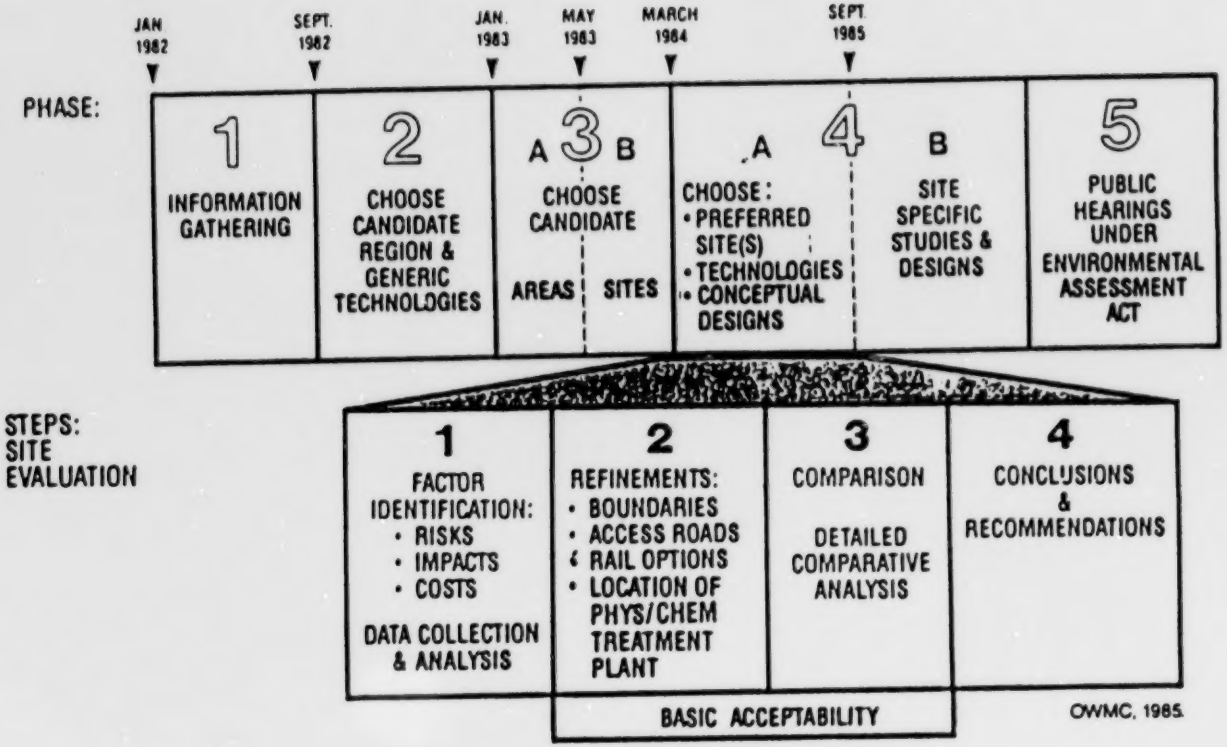

FIGURE 1.1: Facility Development Process

1.4 STUDY AREAS

Eight candidate sites were identified for study in Phase 4A. These sites were relatively small. A much larger site vicinity surrounded each site. Site vicinities were examined to determine impacts of the proposed OWMC facility on regional heritage features.

IER provided boundaries that had been determined by the site selection study team for each site and site vicinity. These boundaries were appropriate for this heritage assessment with the exception of LF-2N. In this case, features beyond the established site vicinity were examined at the request of IER. As noted on the LF-2N Heritage Feature Map (on file with IER) the Meadowvale heritage district in the City of Mississauga was added to the site vicinity.

During the Phase 4A study but after research for this report was completed, the hydrogeologic consultant determined that site LF-2N failed to provide natural containment. Consequently LF-2N was dropped from further consideration as a candidate site.[3]

During the study, it became apparent that three candidate sites were larger than required. Consequently boundaries of sites PI-1N, LF-3C and LF-1E were modified. Due to possible siting options for LF-1E both the original and the new site boundaries were evaluated as candidate sites.[4] Ranks for these sites were reevaluated based on the new boundaries.

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3) Gartner Lee Associates Ltd., Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Geologic, Hydrogeologic and Geotechnical Considerations, 1985 and M.M. Dillon Ltd., Site Selection Process, Phase 4A: Interim Site Selection Report. Candidate Site LF-2N, 1985.

4) For detailed discussion of refinements to site boundaries see M.M. Dillon Ltd., Site Selection Process, Phase 4A: Selection of a Preferred Sites(s) - Site Selection, 1985.

1.5 STUDY LIMITS

1.5.1 FIELD SURVEY

All features were evaluated from the road and from air photos. This provided adequate information for comparison between sites and site vicinities. However, minor buildings may have been overlooked.

No building interiors were evaluated. Choice of material, type of construction and architectural details may be present inside a building that add to the architectural and/or historical importance of a structure. The absence of this information does not affect the conclusion of this report. When a preferred site is selected, building interiors should be examined and appropriate mitigation applied to any significant structures.

1.5.2 SIZE OF DATA BASE

During the field survey, 297 structures were identified as heritage features. Within the time frame of this study it was impossible to fully research the historical significance of all of these structures. However, sufficient research of the site vicinities was conducted to obtain a sound understanding of historical developments in each area. Additional information that may be found for some structures will not affect the ranking of sites or site vicinities but may contribute to a uniqueness for some structures. In particular, additional information may be found in the following categories:

1.5.2.1 Dating of Structures.

Structures in the inventory were dated during the field work by architectural style. In only a few cases were exact construction dates known. Dating was not a problem unless the structure was close to the boundary dates of 1850 and 1914.

1.5.2.2 Identification of Structures.

Many buildings were modified with new siding, additions, roofs and other features. In most cases 19th century structures could still be identified by characteristics such as roof line, size, and windows shapes. Sometimes, however, it was difficult to ascertain architectural significance.

1.5.3 DESIGNATED FEATURES

1.5.3.1 LACAC Information

Local Architectural Conservation Advisory Committees (LACAC) are municipal committees established to advise councils on heritage buildings within municipalities. The quality of LACAC information depends upon the municipality, objectives of the committee, and length of time the LACAC has existed.

During preparation of this study only Mississauga had a long established LACAC backed by professional staff. In the City of Niagara Falls the LACAC was relatively new. LACACs also existed in Milton and Burlington but no LACAC existed for West Lincoln.

LACAC listings are not definitive of all important heritage features in a community. New structures are being continually added to their records. No provincial restrictions as to what may be designated have been established. Therefore LACAC features may, or may not, represent buildings of provincial importance.

LACAC structures, however, are important because they represent heritage landmarks that a community considers worthy of recognition. LACAC members are excellent sources of information regarding buildings in the community whether designated or not.

1.5.3.2 Century Farms

This designation indicates that in 1967 predecessors of the owner owned the property in 1867. The designation does not necessarily mean that the current (1985) property owners can trace family ownership back to 1867 or to the original land title. As well, the designation "century farm" does not indicate if any structures are of historic importance.

Therefore Century Farms were not given any heritage significance in this study.

1.6 FACILITY DESIGN IMPLICATIONS

The OWMC facility will consist of a physical/chemical treatment plant, an incinerator and a landfill site.[5] Depending on a variety of characteristics the preferred

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5) See page 41 for description of siting options.

facility may occupy a single site (integrated site) or two sites (partially integrated sites).

This study examined the sites as eight independent locations. The ranking of combined sites was not undertaken in this study but rather conducted by IER in consultation with Historica Research Limited.

There may be opportunities to locate the physical/chemical treatment plant and incinerator to accommodate significant heritage features on site. The landfill, however, would require the complete removal of all built features.

CHAPTER 2
FACTOR IDENTIFICATION

2.1 FACTORS[1]

Factors were used by all consultants in Phase 4A as a method of defining positive and negative considerations for comparison of sites. All eight sites and site vicinities contained distinctive and diverse heritage features. It was necessary in this study to use one or more factors that could compare disparate historical areas. Several approaches were available. One could have examined a factor of absolute significance of individual heritage features such as houses, barns, and other structures. Another factor could have compared the intensity of distinctive heritage landscapes between sites and site vicinities.

The significance of individual heritage features is exceedingly difficult to determine. Determining a feature's significance requires considerable research. Thus determining a feature's unique heritage significance is only practical when evaluating a small number of structures. This was not feasible in this study due to the great number of identified features. A unique or specific heritage significance is useful for helping to determine appropriate mitigation options for a particular feature. Since specific feature mitigation was not recommended in this study, it was not necessary to develop a unique heritage significance for all features.

Heritage landscapes, on the other hand, can compare features over wide geographic areas. Landscapes are aggregates of numerous features and can therefore

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1) For further details of the factor and indicator identification process see: Institute of Environmental Research Inc. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Social Analysis, 1985.

accommodate a variety of structural types in the assessment. It was possible for this study to develop a comparison of the eight sites based on the relative intensity of the heritage landscape. The factor of heritage landscape could be applied to studies of both the sites and site vicinities.

Measuring the heritage landscapes requires a variety of indicators. These indicators were used to define the intensity, or degree of presence, of heritage landscapes.

2.2 INDICATORS

2.2.1 SITE VICINITY

Three indicators were used to examine the site vicinity. In the evaluation of each site vicinity the candidate site was included as part of the site vicinity. From a historical land use view point, there was no differentiation between sites and site vicinities.

i. Average value of heritage significance of structures

Table 6.2 is a summary of this indicator. The heritage significance of structures was subject to a quantitative evaluation based on criteria of architectural, historic and visual importance. (Appendix One). The numeric measure permitted a ranking of features and hence a means of comparison among the eight site vicinities.

Villages were located at the perimeter of two site vicinities, LF-1E and LF-2N. All of Meadowvale in LF-2N and most of Cook's Mills in LF-1E were further from the candiadate sites than the study boundaries of other site vicinities. To inventory features in these villages would have suggested that these two site vicinities contained greater numbers of buildings than the equivalent area of other site vicinties. Therefore, structures within each village were not evaluated by the numeric system used for individual features elsewhere in the site vicinity. Instead, villages were considered as a single, discrete heritage unit and evaluated descriptively.

ii. Density of structures per square kilometre

The density of structures in Table 6.3 was developed by calculating the number of heritage buildings, both inventoried and noted in surveys, per square kilometre within each site vicinity.

iii. Historic land use
Table 6.4 summarizes assumed trends in historic land use within each site vicinity.

2.2.2 CANDIDATE SITES
Three indicators were also used to evaluate and compare candidate sites.

i. Average value of heritage significance of structures
The same quantitative evaluation of individual structures used in the site vicinity was used in the sites.

ii. Total Number of structures per site
Instead of a density measure used in site vicinities, the total number of structures per site was used. Both inventoried structures and features noted during the survey are included in this indicator.

iii. Farmscapes
A specific indicator of historic land use was to examine farmscapes since each site was in a rural area. This indicator measured the total number of farmscapes per site. A farmscape is a collection of buildings (houses, barns and other structures) and landscaping, such as windbreaks and orchards, in a grouping that evokes images of a family farming operation.

2.3. HERITAGE SIGNIFICANCE

The heritage significance of a feature can only be measured in a relative manner against an established set of criteria. Appendix One describes one set of criteria that can be used to establish a level of feature significance. Any measure of heritage significance contains an element of subjective bias. In addition the significance is influenced by the reasons for which the site evaluation is being undertaken.

Although a single measure of heritage significance was not used as a factor, heritage significance of features impact upon mitigation options and cannot be dismissed in a heritage study. Therefore features in each site were examined to evaluate their heritage significance. The significance of individual features could influence the basic acceptability of each site. An extremely important historic building, for example, could eliminate or severely restrict development of a site.

From a heritage view point, the basic acceptability of each site was further determined by the type of mitigation options available. IER provided information on proposed facilities for each area.[2] From this it was possible to determine the type of beneficial and adverse effects development could have on heritage resources. Adverse affects on heritage resources were related to possible mitigation for each area. In all cases optimal mitigation was assumed in the evaluation.

It was assumed that OWMC have no control beyond actual sites. Therefore mitigation was not assumed for features in site vicinities.

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2) Institute of Environmental Research Inc. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Social Analysis, 1985.

CHAPTER 3
DATA COLLECTION AND ANALYSIS

3.1 GENERAL METHODOLOGY

The methodology selected for this study was based upon published Ministry of Citizenship and Culture heritage planning guidelines.[1] The publication describes criteria by which the Ministry reviews heritage components of environmental assessments.

The primary source of data for the heritage assessment in this report was an inventory of structures within the eight OWMC candidate sites and site vicinities. The large area of the site vicinities and great number of structures that were inventoried necessitated a numeric system of assessment rather than a qualitative description of each feature. Characteristics of the numeric system of evaluation are described in detail in Appendix One. The numeric system used to rank sites in the inventory was adapted from Parks Canada procedures.[2]

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1) Ontario. Ministry of Citizenship and Culture Guidelines on the Man-made Heritage Component of Environmental Assessments. By John Weiler, 1981.

The methodology for the selection and evaluation of heritage landscapes and structures was further refined by information from James Fitch, Historic Preservation: Curatorial Management of the Built World. N.Y.: McGraw Hill, 1982 and Ontario Ministry of Citizenship and Culture, Continuity With Change, Mark Fram and John Weiler (ed.). Toronto, 1981.

2) Canada. Parks Canada, The Evaluation of Historic Buildings, by Harold Kalman. 1980.

3.2 SOURCES OF INFORMATION

3.2.1 DOCUMENTARY RESEARCH

A brief historical report (Appendix Three) was prepared for all sites and site vicinities. This research made it possible to determine significant historic themes for each area and to predict types of structures and landscapes that might be located during a field survey.

Sites and site vicinities were researched through secondary and primary source documents. Air photo coverage and base mapping were provided by IER.

Heritage data collected in Phase 3B for IER were reviewed. Also reviewed was the Phase 4A archaeological report prepared by the Museum of Indian Archaeology.[3]

3.2.2 FIELD SURVEY

Field work was undertaken in late December, 1984 and early January, 1985 to inventory features within the sites and site vicinities. Winter conditions did not interfere with the accuracy of the field work.

All residential, commercial, industrial and institutional structures that met criteria described in Appendix One were inventoried. The principal limiting factor for inclusion in the inventory was that only pre-1914 buildings were inventoried. In a few exceptional cases post 1914 features were also inventoried. A total of 297 structures were quantified during the field work. An additional 61 structures within sites and site vicinities were identified but not rated by the numeric evaluation of the inventory. These features included cemeteries, bridges, monuments and barns that contributed to the heritage landscape but did not fit the architectural criteria discussed in Appendix One.

The manner in which a numeric evaluation is compiled may obscure individual features of great importance (see Appendix 1). Such features may not score highly in the evaluation because they have characteristics that are not included in the evaluation criteria. During the field work all features in the candidate sites were individually

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3) Gartner Lee Associates Ltd. and Museum of Indian Archaeology, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Archaeology, 1985.

FIGURE 3.1: Sample Inventory Form

Name:				Reference No.:	
Date of Report:				Architecture: (40)	
Location:				Architect	8 4 2 0
Street No.:				Design	8 4 2 0
Lot:	Con:			Construction	15 8 4 0
Township:				Style	20 10 5 0
County/R.M.:				Age	10 5 0
1:50,000 Map & Grid Ref.:				Historical: (30)	
				Person	25 10 5 0
Air Photo Ref:				Event	25 10 5 0
Dating:				Context	25 10 5 0
Original Use:				Landscape: (20)	
Current Use:				Continuity	10 5 2 0
Ownership:				Setting	10 5 2 0
Reporter:				Landmark	10 5 2 0
Christopher Andreae Historica Research Ltd 61 Lonsdale Drive London, N6G 1T4 (519) 657-1851				Integrity: (10)	
				Site	5 3 2 0
				Alterations	5 3 2 0
Description:					
Additional Sources of Information:					

evaluated against a wide range of heritage criteria to see if they contained possible significant characteristics.

All sites were inventoried and photographed using a modified Ministry of Citizenship and Culture inventory form.(Figure 3.1)

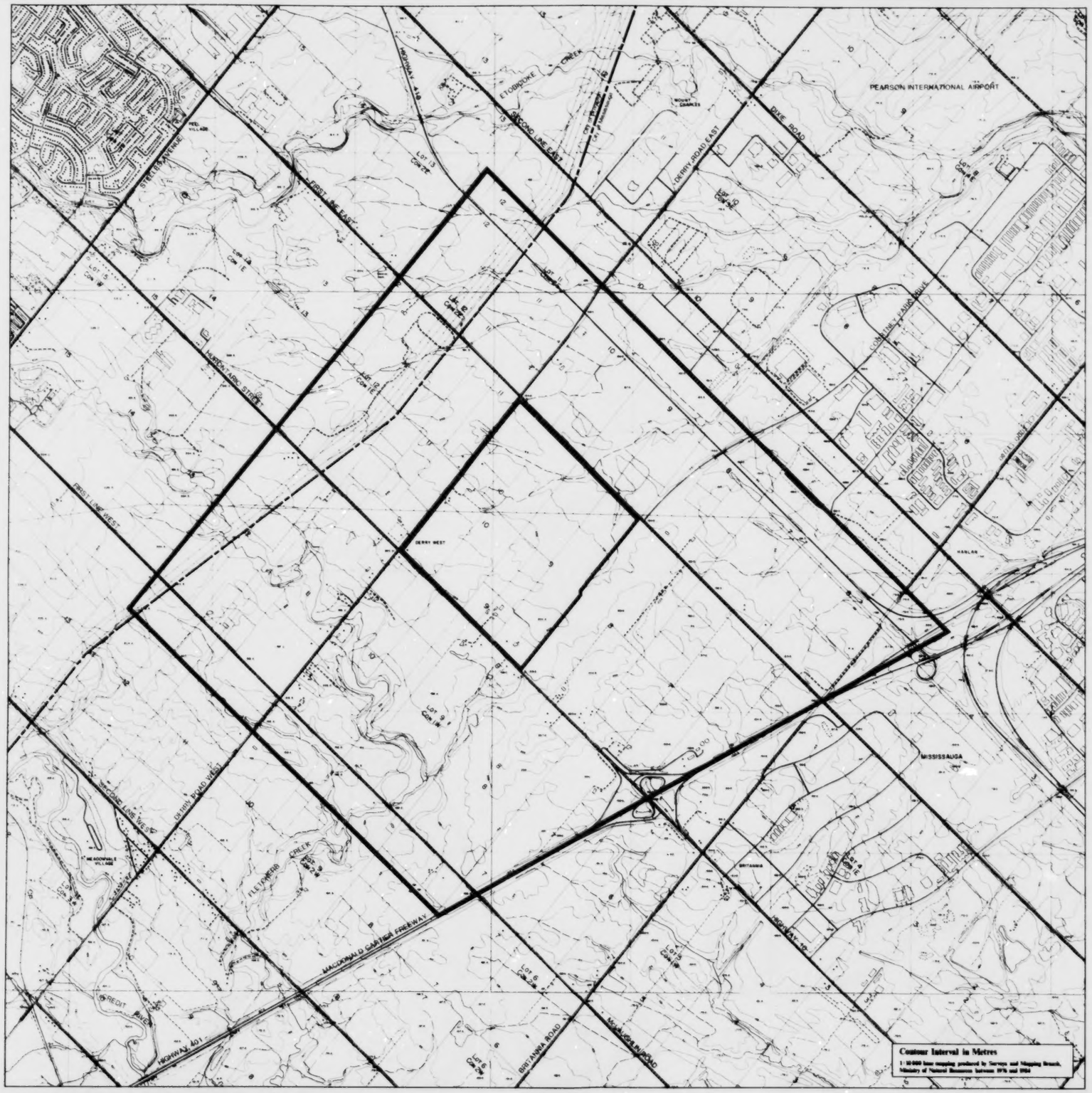
3.2.3 PUBLIC INPUT

Various groups and individuals were contacted to determine additional historical information. Individuals also provided input into heritage sites of local significance. These contacts are listed in the back of this report.

3.3 DATA COMPILATION

All indicators used in assessing the factor of heritage landscape in both sites and site vicinities were assumed to be equal and no weightings were applied. It is assumed that the impact of the OWMC facility will be immediate and severe within the sites and long term and not severe in the site vicinities (See Chapter 5) .

Data for this heritage study were incorporated into the IER Social Analysis. The heritage weightings and selection of indicators in the IER report were developed in consultation with Historica Research Limited.



OWMC Ontario Waste Management Corporation

Consultant:

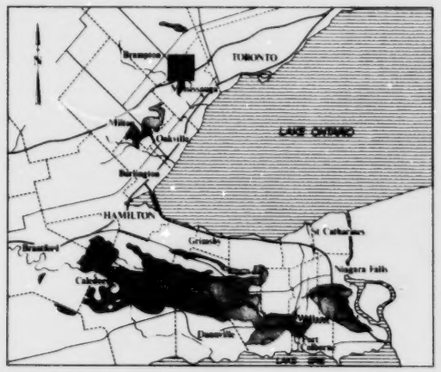
HISTORICA RESEARCH LIMITED

Legend:

Phase 3B Acquisition Boundary — Site Vicinity Study Area Boundary

Key Map: LF-2 North

Lots 9 and 10; Concession I EHS (East of Hurontario Street), City of Mississauga



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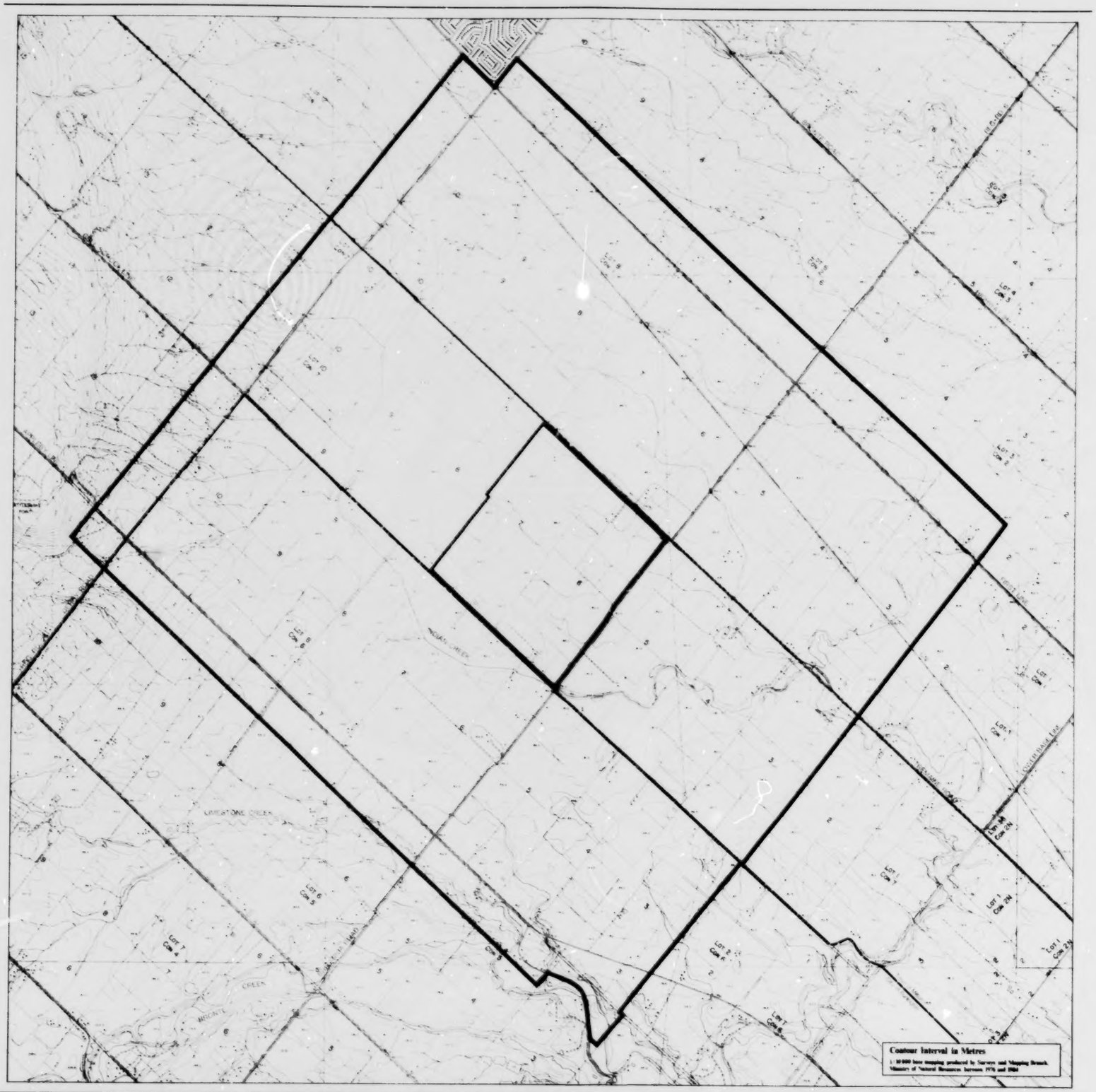
500 metres 0 500

STUDY AREAS

DECEMBER 1985 **MAP 1**



OWMC Ontario Waste Management Corporation

Consultant:

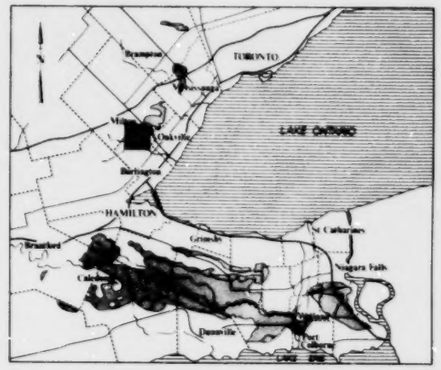
HISTORICA RESEARCH LIMITED

Legend:

Phase 3B Acquisition Boundary — Site Vicinity Study Area Boundary

Key Map: LF-4 North

Lots 6 and 7; Concession VII; Town of Milton, formerly in the Township of Nelson



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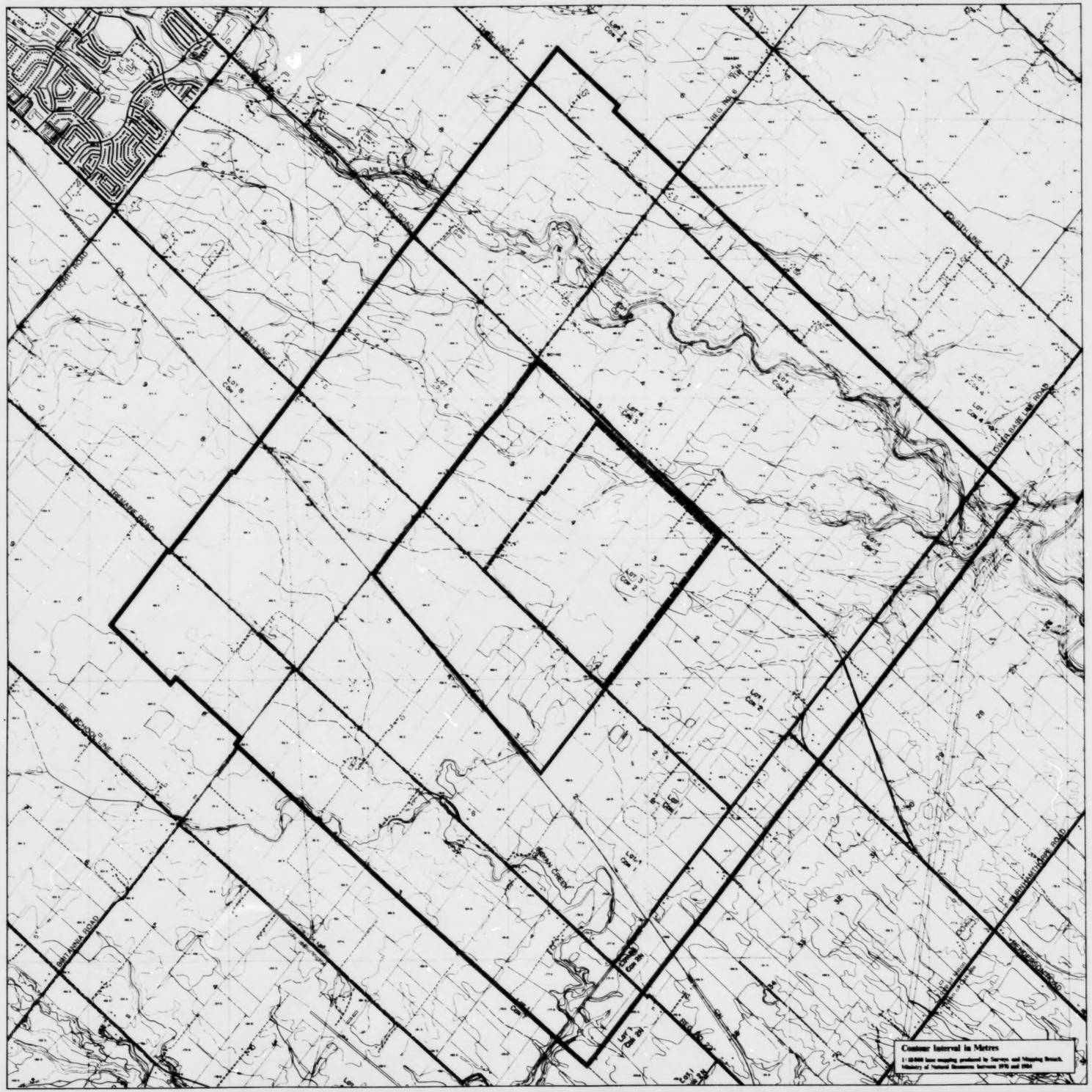
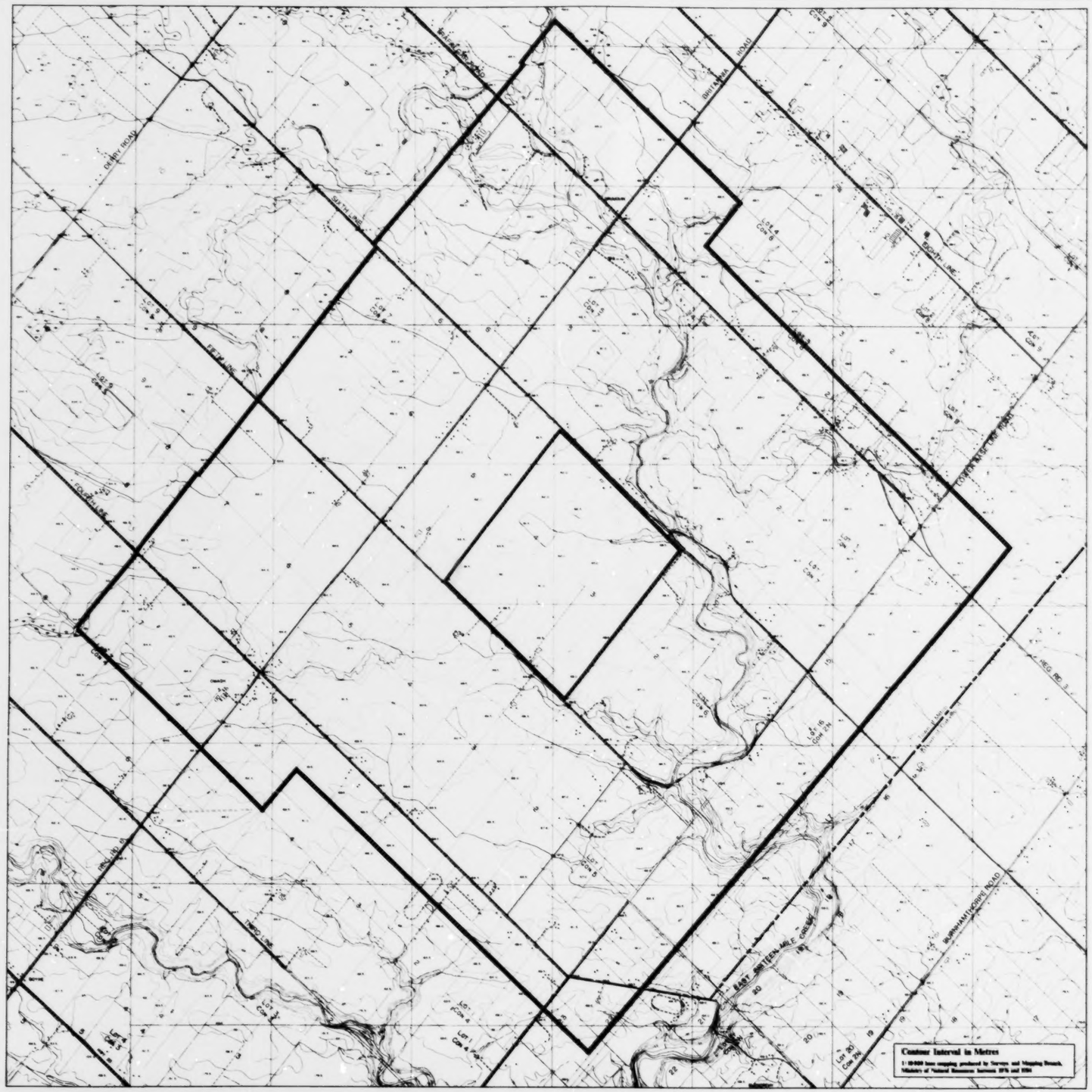
STUDY AREAS

DECEMBER 1985 MAP 2


TRAFALGAR ROAD
TRAFALGAR ROAD
BRITANNIA ROAD
BRITANNIA ROAD
BRITANNIA


DERRY ROAD
SIXTH LINE
BRITANNIA ROAD
REGIONAL ROAD 25
FIFTH LINE
FOURTH LINE
TOWN BOUNDARY
THIRD LINE
SECOND LINE
BURNHAMTHORPE ROAD
EAST SIXTEEN MILE CREEK
Lot 1 Con 1 NDS
Lot 2 Con 1 NDS
Lot 3 Con 1 NDS
Lot 4 Con 1 NDS
Lot 1 Con 2 NDS
Lot 2 Con 2 NDS
Lot 3 Con 2 NDS
Lot 4 Con 2 NDS
Lot 1 Con 3 NDS
Lot 2 Con 3 NDS
Lot 3 Con 3 NDS
Lot 4 Con 3 NDS
Lot 1 Con 4 NDS
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Lot 2 Con 7 NDS
Lot 3 Con 7 NDS
Lot 4 Con 7 NDS
Lot 1 Con 8 NDS
Lot 2 Con 8 NDS
Lot 3 Con 8 NDS
Lot 4 Con 8 NDS
Lot 1 Con 9 NDS
Lot 2 Con 9 NDS
Lot 3 Con 9 NDS
Lot 4 Con 9 NDS
Lot 16 Con 2 SDS
Lot 20 Con 2 SDS
Contour Interval in Metres

OWMC Ontario Waste Management Corporation

Consultant:

HISTORICA RESEARCH LIMITED

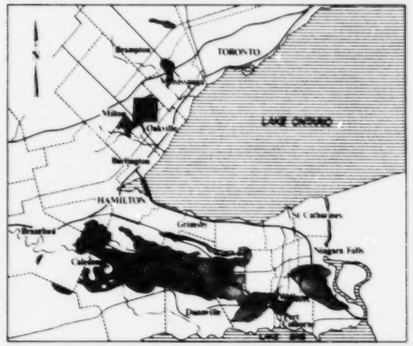
Legend:

Phase 3B Acquisition Boundary

Site Vicinity Study Area Boundary

Key Map: P1-13 North

Lots 3 and 4; Concession VI; Town of Milton, formerly the Township of Trafalgar



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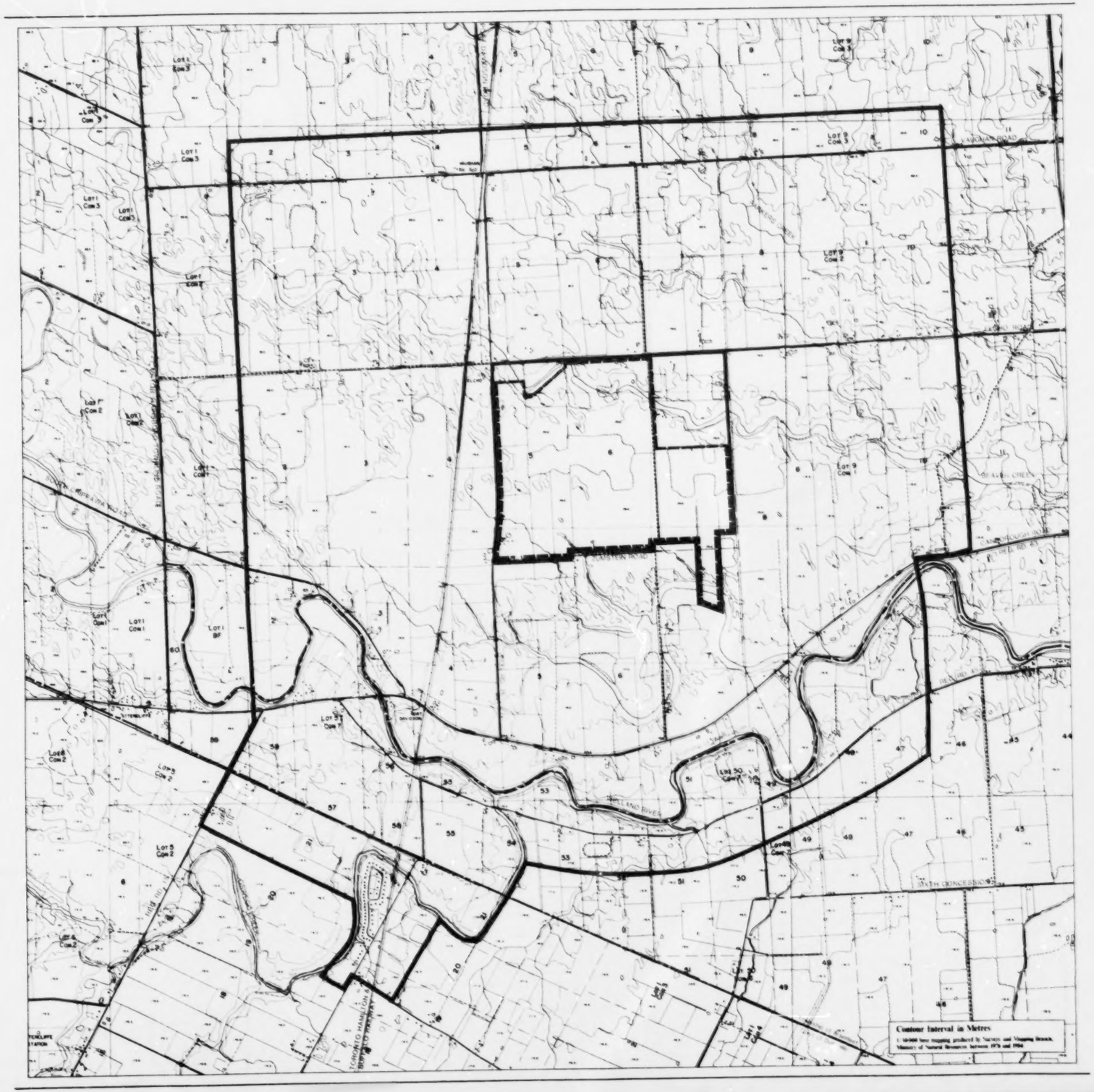
500 metres 0 500

STUDY AREAS

DECEMBER 1985

MAP 4



OWMC Ontario Waste Management Corporation

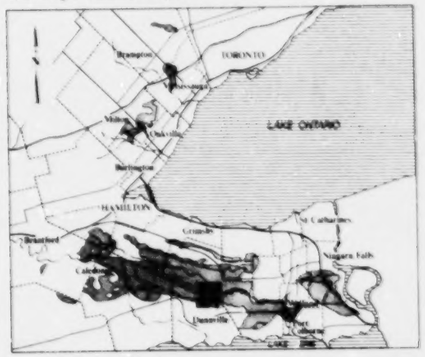
Consultant:
HISTORICA RESEARCH LIMITED

Legend:

Proposed Acquisition Boundary
Phase 3B Acquisition Boundary
Site Vicinity Study Area Boundary

Key Map: LF-3 Central

Lots 5, 6 and 7; Concession I; Part of Lot 7; Broken Front Concession; Township of West Lincoln; formerly in the Township of Gainsborough



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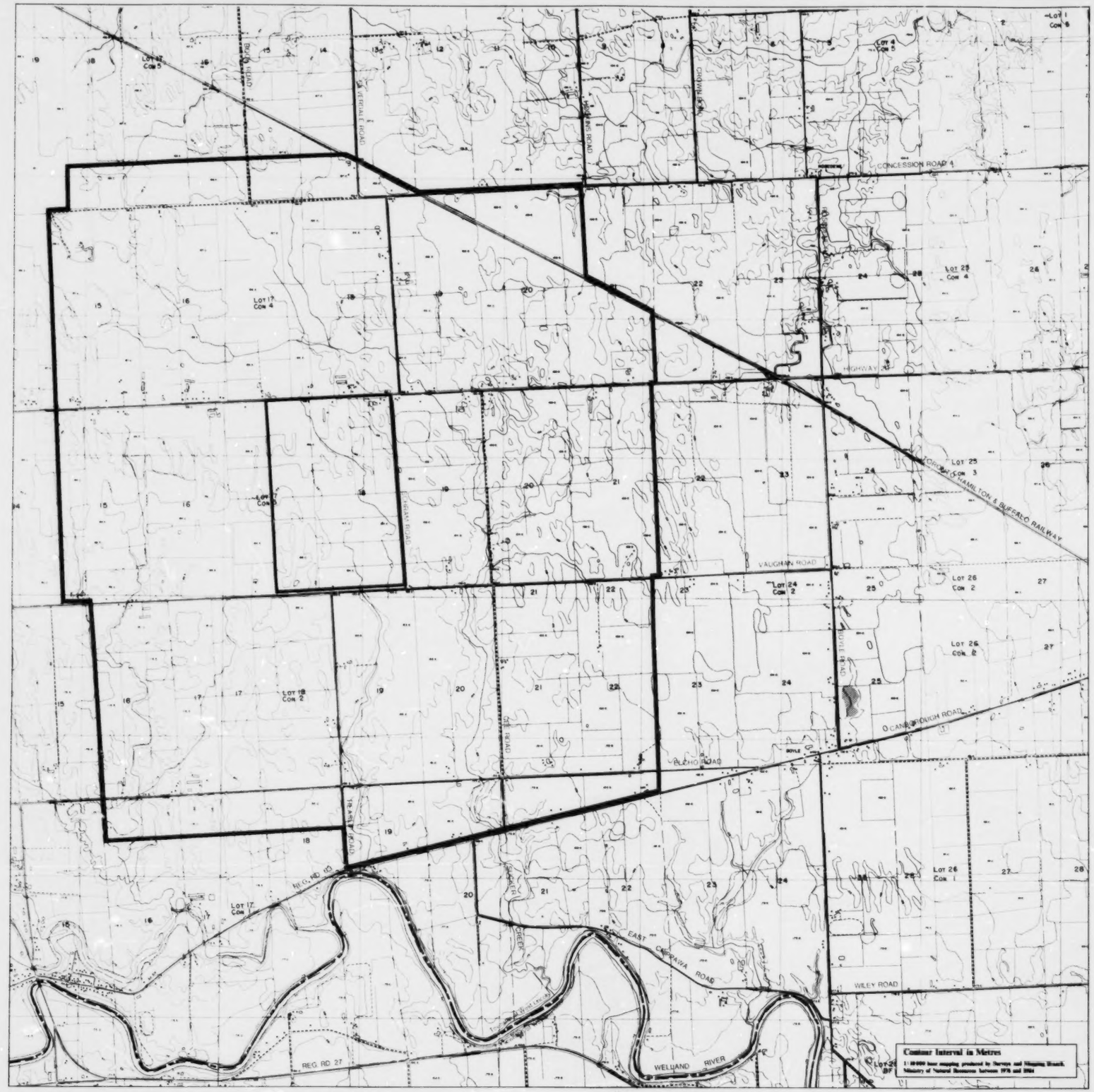
500 metres 0 500

STUDY AREAS

DECEMBER 1985 MAP 5



OWMC Ontario Waste Management Corporation

Consultant:

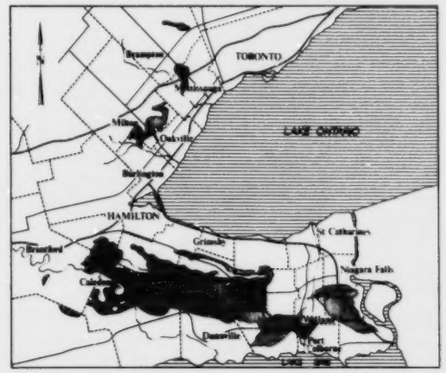
HISTORICA RESEARCH LIMITED

Legend:

Phase 3B Acquisition Boundary — Site Vicinity Study Area Boundary

Key Map: **LF-9 Central**

Lot 18 and Part of Lot 17; Concession III; Township of West Lincoln; formerly in the Township of Gainsborough



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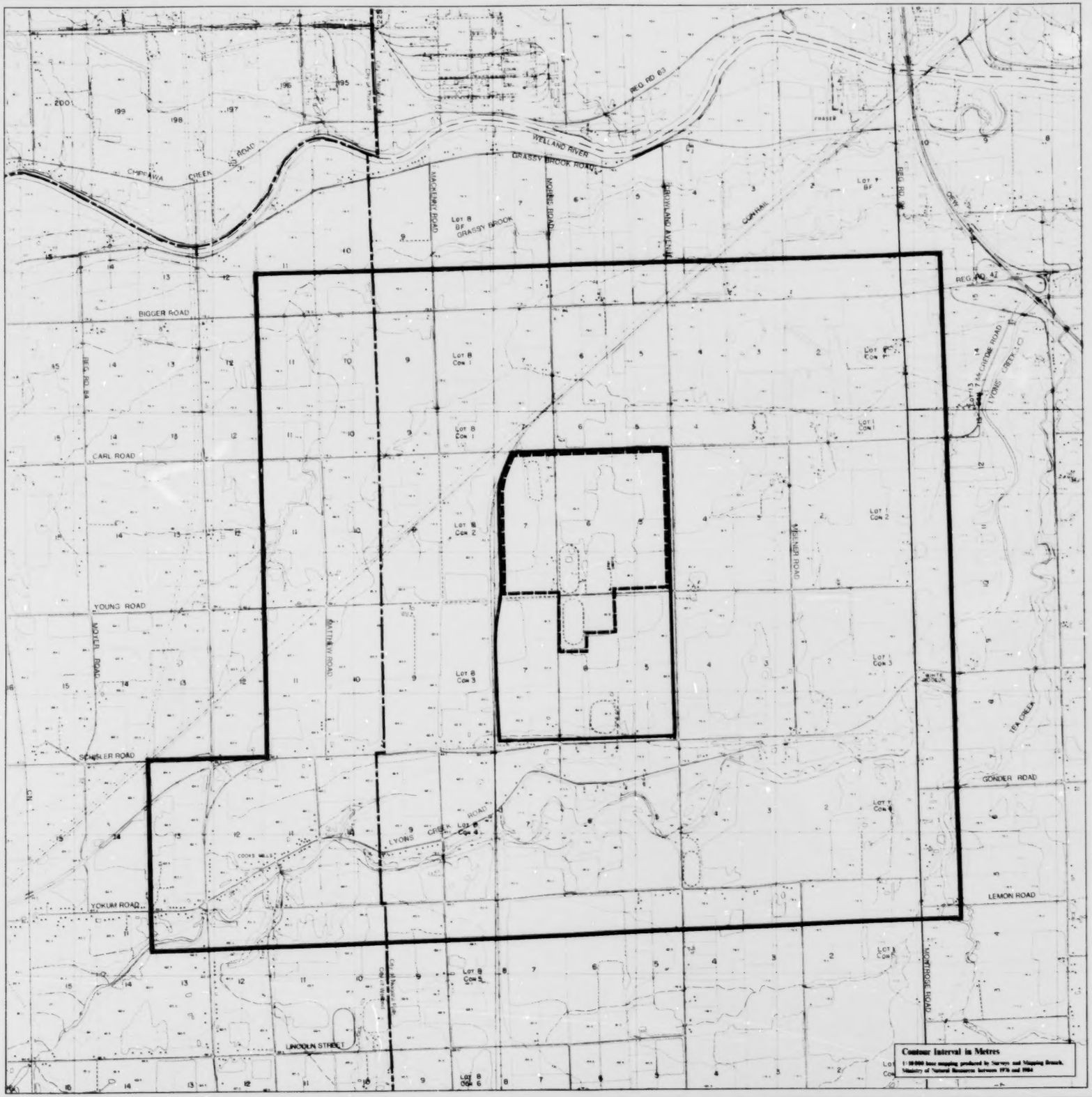
STUDY AREAS

DECEMBER 1985 **MAP 6**



OWMC Ontario Waste Management Corporation

Consultant:

HISTORICA RESEARCH LIMITED

Legend:

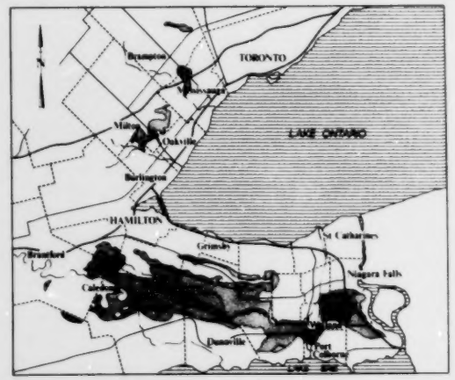
Proposed Boundary for Partially Integrated Siting Option

Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)

Site Vicinity Study Area Boundary

Key Map: LF-1 East

Lots 5, 6 and 7; Concessions II and III; City of Niagara Falls; formerly in the Township of Crowland



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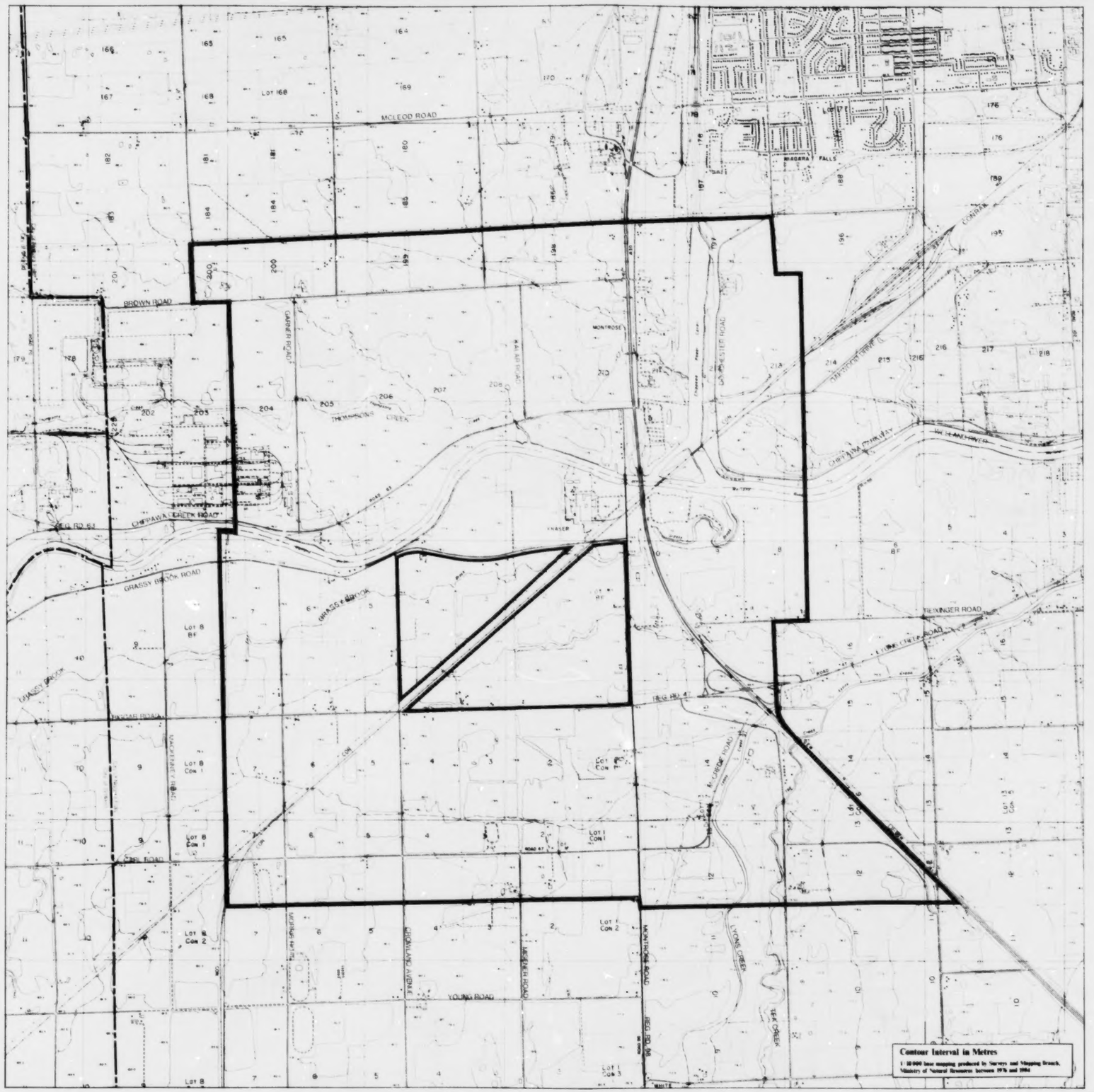
STUDY AREAS

DECEMBER 1985 **MAP 7**



Consultant:

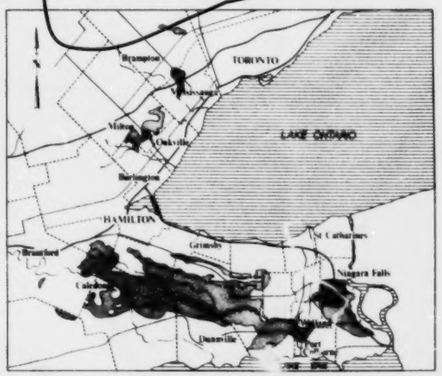
HISTORICA RESEARCH LIMITED

Legend:

Phase 3B Acquisition Boundary — Site Vicinity Study Area Boundary

Key Map: PI-27 East

Part of Lots 1, 2, 3, and 4; Broken Front Concession Welland River; City of Niagara Falls; formerly in the Township of Crowland



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STUDY AREAS

DECEMBER 1985 **MAP 8**

CHAPTER 4
SITE DESCRIPTIONS

4.1 MISSISSAUGA

4.1.1 LF-2N (Landfill - Physical/Chemical Treatment)

SITE VICINITY

The site vicinity is remarkably evocative of rural Ontario despite urbanizing pressures to the north from Brampton and the south from Mississauga. Yet since the 1950s land use both to the north and south of the site has become rapidly urbanized. As a result there are pronounced modern intrusions into the site vicinity. Ontario Hydro has a major transmission corridor along the northern boundary of the site vicinity. Brampton highrise apartments are visible in the northern end of the site. Derry Road and Hurontario Road are major four lane highways.

A significant heritage region within the site vicinity is Meadowvale Village. Located 2.5 km west of the site, the village has been designated a heritage conservation district under the "Ontario Heritage Act". This status defines development guidelines to protect the heritage aspects of the community's architecture. Meadowvale is significant as it is representative of many 19th century hamlets that no longer exist in Ontario.

The LF-2N area may appear to contain more important heritage features than the other site vicinities. Including the village of Meadowvale there are 16 listed or designated structures in the site vicinity. This large number is due largely to well organized historical organizations within the City of Mississauga. The number of features also represents a keen interest, both by the City and individuals, to preserve significant remaining vestiges of the area's 19th century heritage.

MAP 9
MISSISSAUGA: LF-2N SITE

6A	house
6B	barn
7A	house
7B	barn
8A	house
8B	barn
9	house

farmscape

Across Highway 10 from the site is a LACAC designated building, Hansa House #9.[1]

SITE

The site is bordered on two sides by four lane highways. Along the north runs Derry Road, while to the west side runs Highway 10. The property is crossed by a hydro transmission line.

The LF-2N site contains three farmscapes each of which contains 19th century houses and barns.

The house at map #7A is a red brick 1 1/2 story building probably dating from the 1850s-1870s. The "T" plan of the building is very typical of this era. The farmstead includes a large gambrel roof barn, #7B, on stone foundations and a concrete silo. There is also a smaller drive shed.

The Mississauga LACAC has listed the house at map #6A as being of potential architectural interest. The house dates from the 1870s and displays some Gothic Revival elements typical of the period such as bargeboard and lancet windows. The principal barn on the property, #6B, is a relatively uncommon barrel roof structure clad in sheet metal. Another large building appears to be a chicken barn. There are also several smaller outbuildings.

The house at map #8A may date from as late as the 1920s. The two story, hip roof design, sometimes known as a "four square" pattern, is exceedingly common in southern Ontario. The barn, #8B, is a traditional large gambrel roof structure.

Other buildings in the candidate site are post 1914 and include modern houses, a gas station and a Peel Region garage.

During the Phase 4A study but after research for this report was completed, the hydrogeologic consultant determined that site LF-2N failed to provide natural

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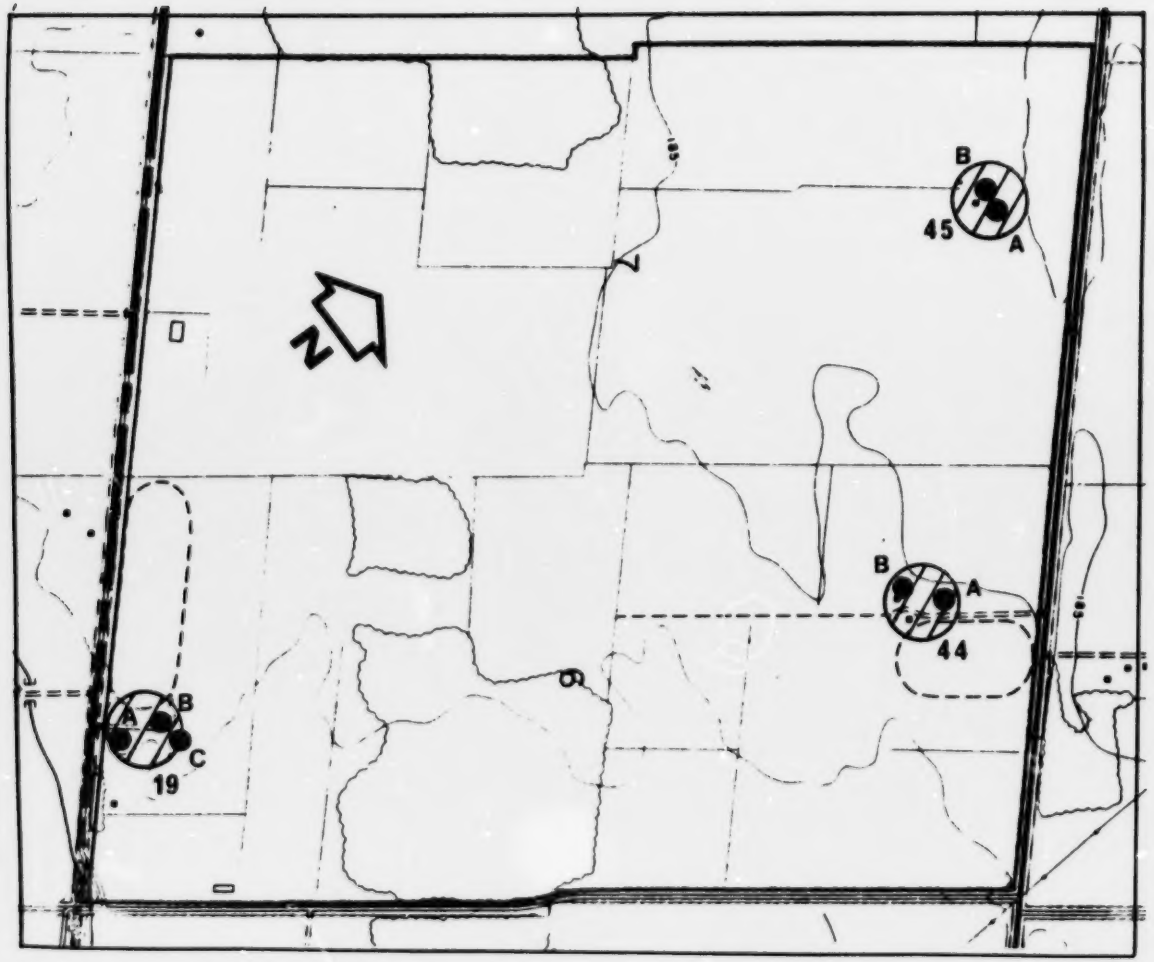
1) Number refers to feature location on accompanying site maps in this section.



MAP 10
MILTON: LF-4N SITE

19A	house
19B	barn
19C	barn
44A	house
44B	barn
45A	house
45B	barn

farmscape

containment. Consequently LF-2N was dropped from further consideration as a candidate site.[2]

4.2 MILTON

4.2.1 LF-4N (Landfill - Physical/Chemical Treatment)

SITE VICINITY

This site vicinity is located at the base of the Niagara Escarpment. The north eastern edge butts on the built up area of the Town of Milton. The area is still predominantly rural although there are numerous residential estate lots that infill among farms.

SITE

The site contains three farmscapes each of which contains barns and 19th century houses.

The large house at map #19A is a two story red brick building that appears to date from circa 1900. The two storey porch, projecting gable roof, and tall vertical appearance of the house are distinctive features of this era. The design is relatively common both in rural and urban areas. There are two barns associated with the farmscape; one is a large gambrel roof structure, #19B, the other is a smaller, probably modern, gable roof barn #19C.

The 1 1/2 story stucco house at map #44A appears to date from the 1850s-1860s. It is built in a Gothic Revival style. In addition to a large gable roof barn, #44B, are several smaller outbuildings.

The house at map #45A is a red brick, hip roof building of the 1870s-1880s built in the "four square" style. A large gambrel roof barn, #45B, and several smaller outbuildings are part of the farmscape.

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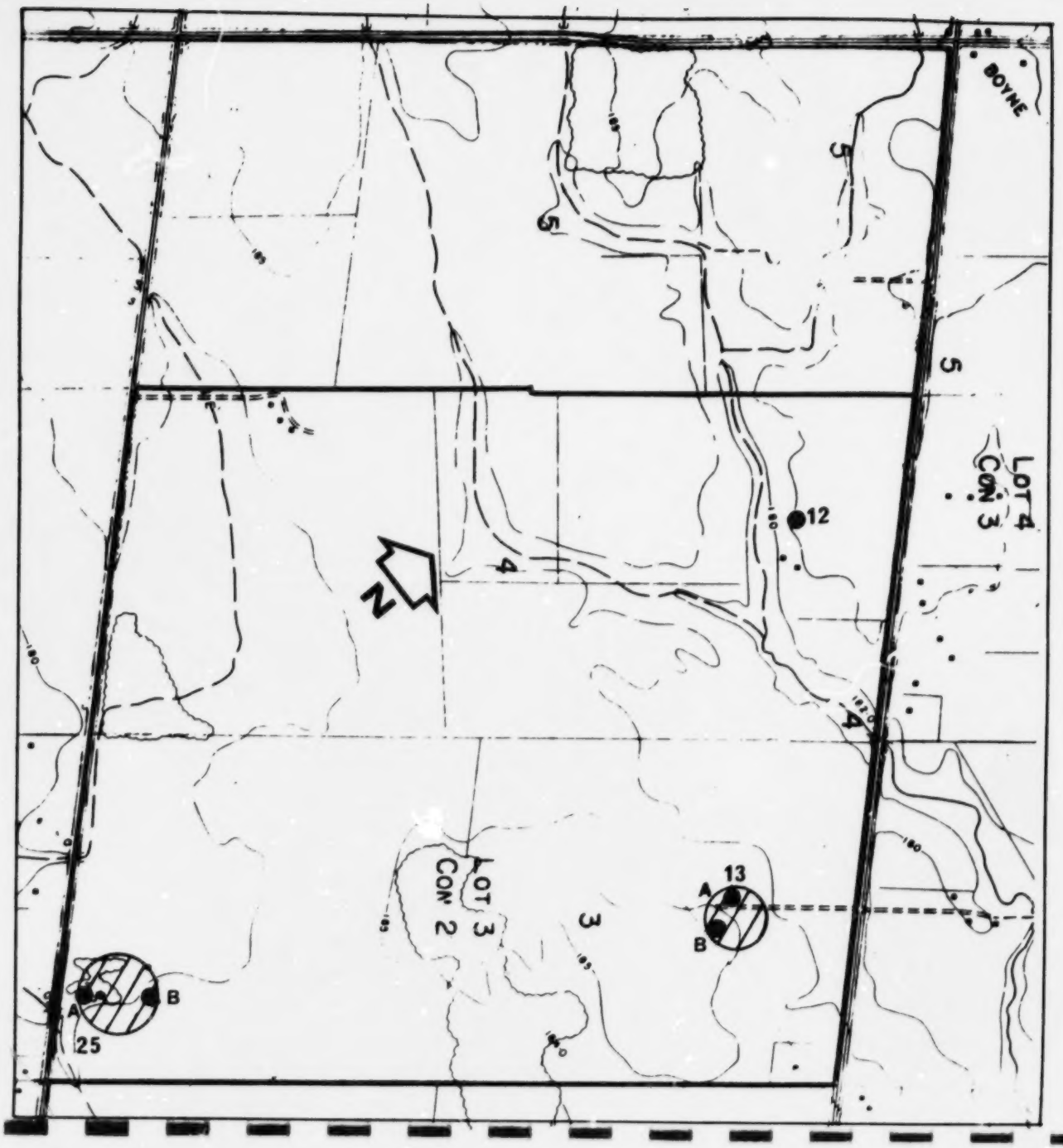
2) Gartner Lee Associates Ltd., Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Geologic, Hydrogeologic and Geotechnical Considerations, 1985 and M.M. Dillon Ltd., Site Selection Process, Phase 4A: Interim Site Selection Report. Candidate Site LF-2N, 1985.



MAP 11
MILTON: PI-1N SITE

12 house
13A house
13B barn
25A house
25B barn

farmscape

4.2.2 PI-1N (Physical/Chemical Treatment - Incinerator)

SITE VICINITY

The site vicinity is very rural in character. Vestiges of the former village of Boyne are found on Highway 25 at the north east corner of the candidate site. Along with PI-13N, the site vicinity contains numerous examples of fine 19th century housing.

SITE

The PI-1N site contains two farmscapes and one independent house.

The "four square" design of house at map #13A is a typical two story hip roof building from the 1870s-1890s. The barn, #13B, is a gable roof structure. Behind the barn are remains of an evergreen windbreak.

The stucco house at map #25A is a fine example of the Gothic Revival style with its decorative bargeboard and lancet window. The 1 1/2 story building is in the "T" plan so common of the 1860s and 1870s. Associated with the house is a large gambrel roof barn, #25B. The foundation is apparently of terra cotta block.

Standing as a remnant of a former farmscape is the fine Georgian Style house at map #12. This two story, hip roof building dates from the 1840s. It is a good example of an architectural style for which there are few remaining examples. The building has been designated by the Burlington LACAC. Near the house are remains of a ruined barn.

4.2.3 PI-13N (Physical/Chemical Treatment - Incinerator)

SITE VICINITY

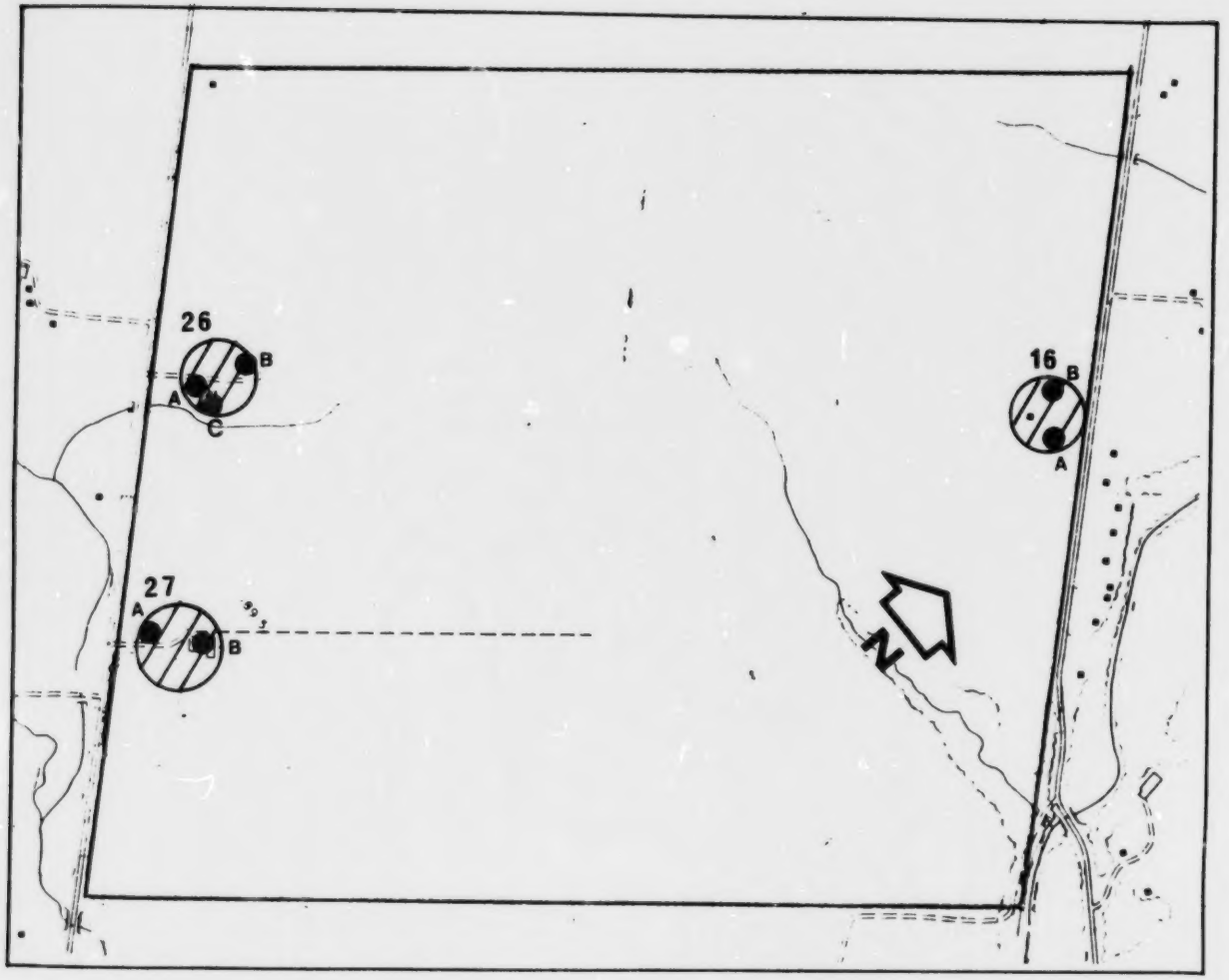
The area is very rural in character. The 19th century hamlet of Omagh is still visible as a cluster of buildings on Britannia Road. Although the site vicinity is generally flat, the East Oakville Creek has cut a deep ravine to the south and east of the candidate site.

Along with site vicinity PI-1N, this area contains many fine examples of 19th century housing.

SITE

The site contains three farmscapes.

The house at map #26A appears to date from the 1920s-1930s. With the house are two barns. One is a large gambrel



MAP 12
MILTON: PI-13N SITE

16A house
16B barn
26A house
26B barn
26C barn
27A house
27B barn

farmscape

roof barn, #26B, with a modern steel shed attached. Also on the site is a smaller drive shed, #26C.

The house at map #16A is rather intriguing. At first glance it is a non-descript two story insulbrick house with a single story addition. The balanced facade of the main house and a small exposed section of clapboard suggest it might date from the 1830s or 1840s. It could also be a much later building. Near the house is a large gambrel roof barn, #16B, with a stone foundation.

The two story house at map #27A probably dates from the 1860s - 1870s. The pitch of the roof and iron railing over the projecting window suggest Italianate influences. The red brick with contrasting brick trim, although common for the period, add to the attractiveness of the house. The farmscape is completed with a large gambrel roof barn, #27B, and two concrete silos.

4.3 WEST LINCOLN

4.3.1 LF-3C (Landfill - Physical/Chemical Treatment - Incinerator)

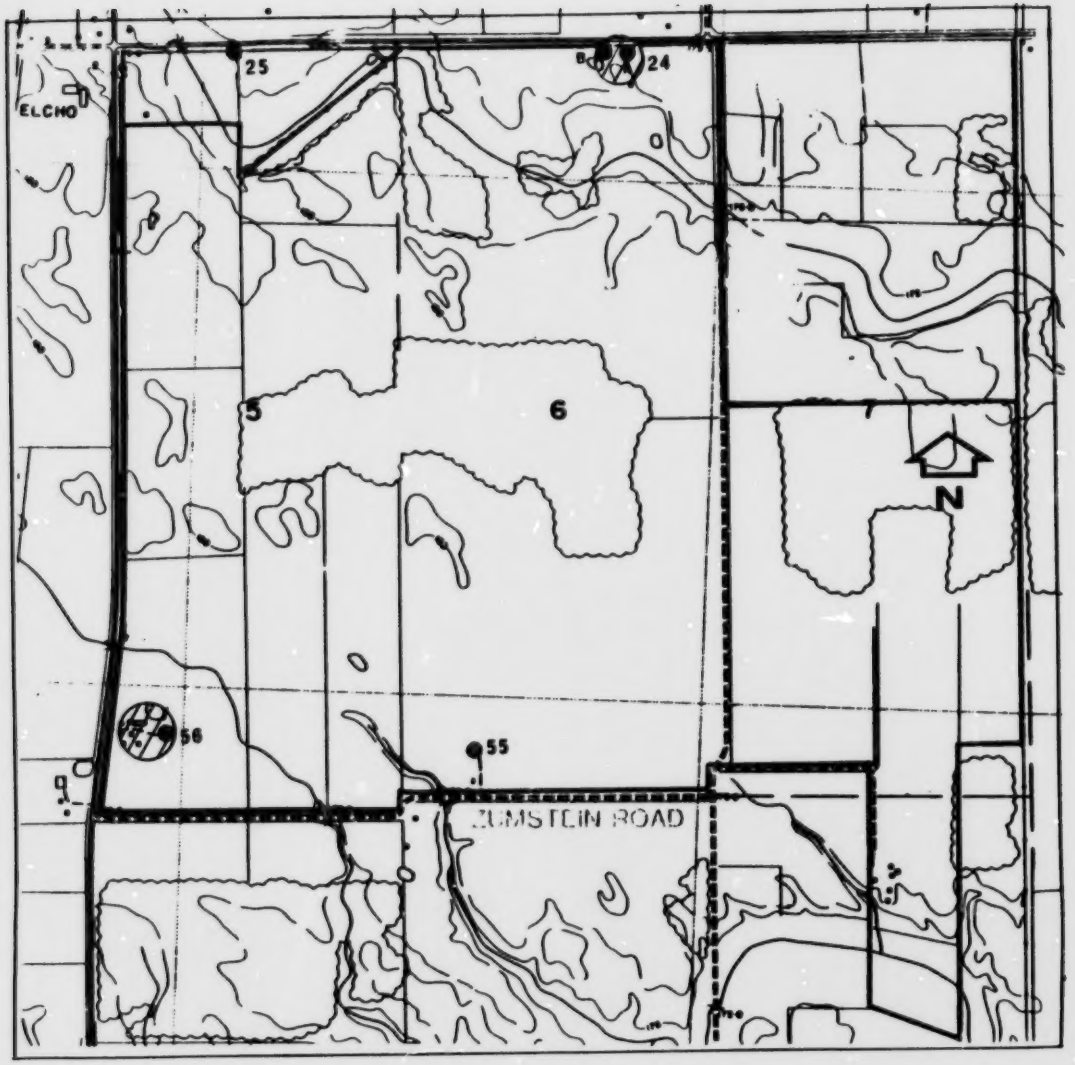
SITE VICINITY

The LF-3C site together with LF-9C is the most rural of the eight site vicinities. The land has been almost exclusively agricultural since settlement began. There has never been any larger settlements than hamlets and no industrial activity. The only exception is Oswego Park subdivision, a 1960s-1970s subdivision of about 40 houses in the south west corner of the site vicinity.

During the field work phase of this report, it was noted that most of the oldest buildings in the site vicinity are located near the Welland River, indicating the importance of the water route for early settlement.

Interesting landscape features are the timber trestle bridges of the Toronto, Hamilton & Buffalo Railway. This type of bridge construction is now rare in southern Ontario. Also of interest are the trails at the south east corner of the site vicinity and the closed road allowance of the Gainsborough/Wainfleet Townline that evoked images of 19th century road conditions.

Adjacent to the candidate site is the Elcho United Church, map #25, originally built by the United Brethren in 1865. The red brick building is a good example of ecclesiastical architecture of the mid-19th century. A



MAP 13
WEST LINCOLN: LF-3C SITE

24A	house
24B	barn
25	Elcho United Church
55	barn
56	barn

farmscape

modern (20th century) insulbrick addition has been added to the west side. Nevertheless the building has retained its original architectural characteristics. Development of the candidate site should be done to minimize negative impacts on this structure.

SITE
The site contains two farmscapes and an independent barn.

The "four square" house at map #24A is a typical two story, hip roof house. The simple design of the building is somewhat relieved with an addition projecting from the front facade. Although the siding is twentieth century, the building probably dates from the 1870s - 1880s. Nearby is a gambrel roof barn, #24B.

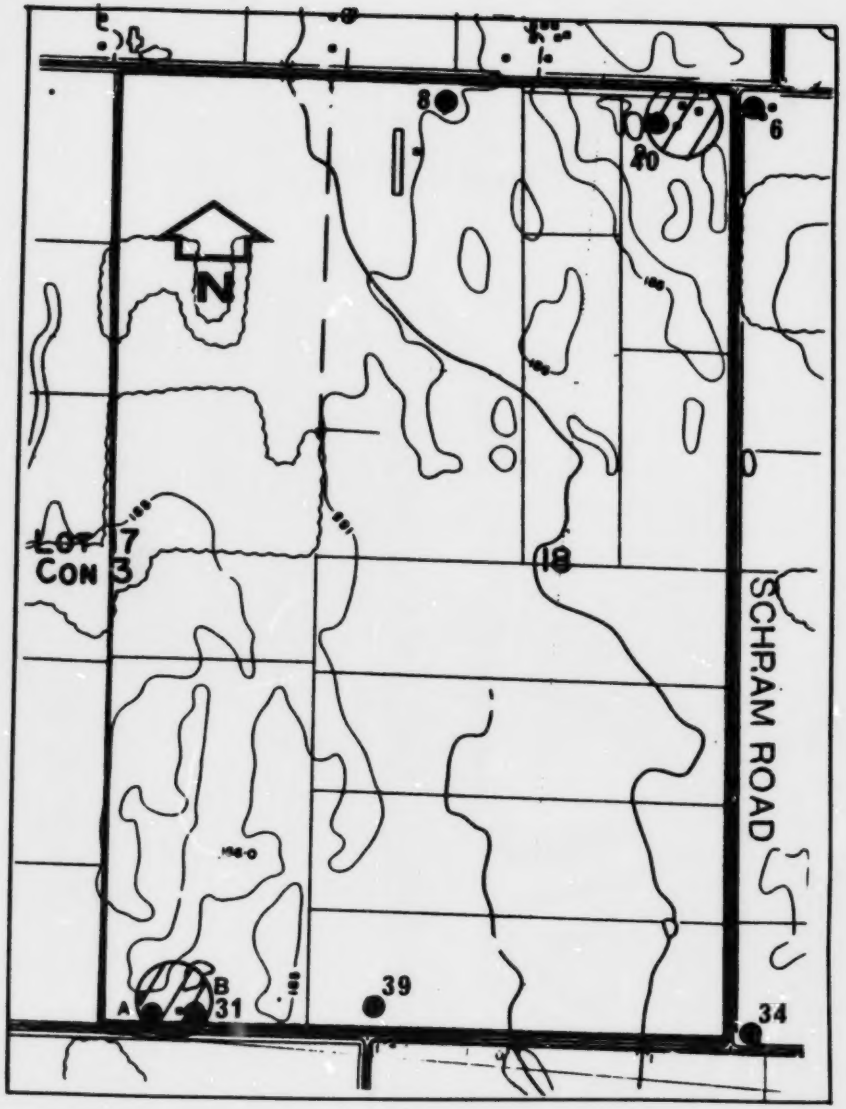
The modest gambrel roof barn at map #56 is associated with a 20th century house. The gambrel roof barn at map #55 is associated with a modern house. The grouping is too disperse and lacking in any form of landscaping to create the feeling of a farmscape.

4.3.2 LF-9C (Landfill - Physical/Chemical Treatment - Incinerator)

SITE VICINITY
The LF-9C site together with LF-3C is the most rural of the site vicinities. The land within LF-9C has been rural since settlement and never had any larger settlement than hamlets and no industrial activity.

Close to the candidate site are two structures of interest. At map #6 is a former church and garage. Parts of this building were probably built in the 1870s as a church and lancet windows can still be seen from inside the structure. Around the turn of the century the building was converted into a blacksmith shop and later a garage. The board and batten siding and "false front" design are distinctive. Although once common design features, there are few remaining examples today. The building is close to the road and opposite the candidate site. The building is slated for demolition by the owners.

An 1883 former school is located at map #34. The red brick structure with contrasting brick trim and semi-circular headers on the windows is typical of late 19th century school design. When the building was converted into a house some of the changes, such as the "Tudor" siding, were not in keeping with the original design.



MAP 14
WEST LINCOLN: LP-9C SITE

6	garage (abandoned)
8	house
31A	house
31B	barn
34	house (former school)
39	barn
40	barn

farmscape

SITE
LF-9C contains two farmscapes, an independent barn and an independent house.

The modest 1 1/2 story house at map #31A is probably 20th century. The structure has been so heavily modified with modern siding that dating is difficult. Adjacent to the house is a very large "L" shaped gable roof barn, #31B, and concrete silo. A modern drive shed is also on the property.

The small gambrel roof barn at map #40 is associated with a modern house.

The 1 1/2 story brick house at map #8 is built on the "T" pattern common in the 1860s-1880s. Major decorative elements include semi-circular heads and key stone on the windows and the two story projection in the gable end.

At map #39 is a single gable roof barn. There may be other remains of a former farm although no ruins were visible.

4.4 NIAGARA FALLS

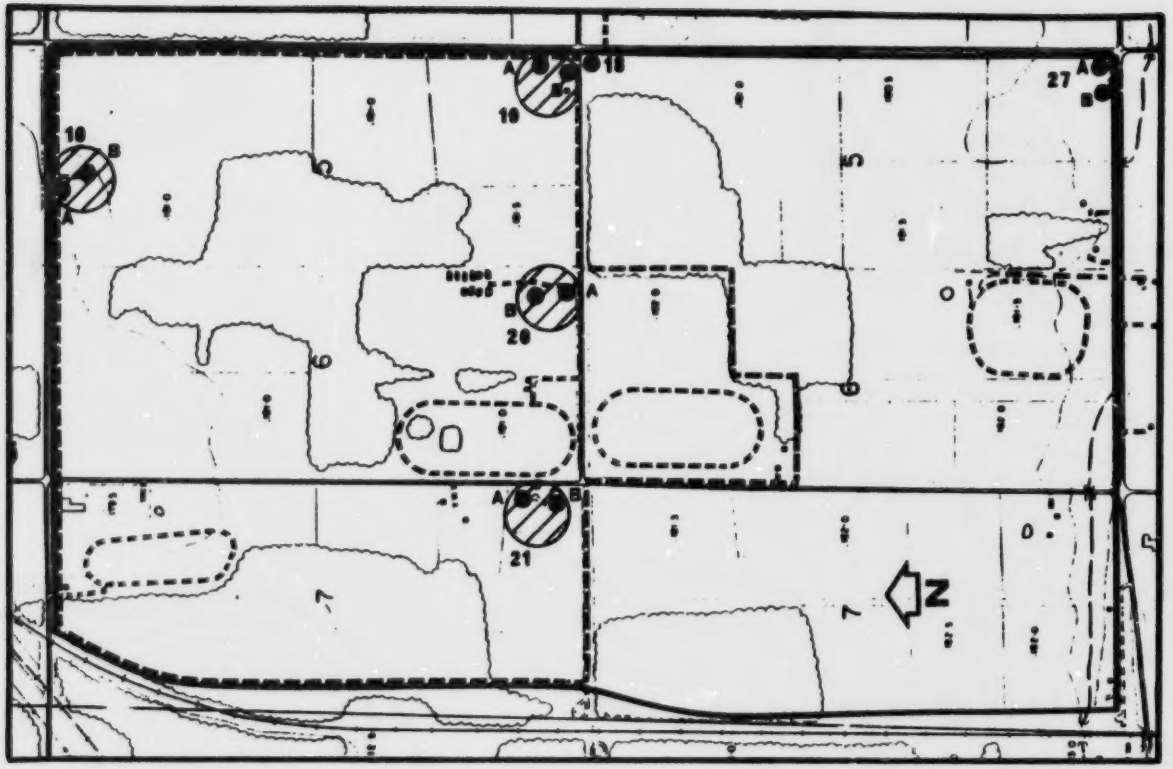
4.4.1 LF-1E (Landfill - Physical/Chemical Treatment - Incinerator)

SITE VICINITY
The area is primarily rural, although the northern section contains a number of commercial junk yards among the farms. Lyons Creek Road, just south of the candidate site, contains a considerable number of old and attractive houses suggesting that Lyons Creek was an important transportation route in the early period of settlement.

The village of Cooks Mills is located approximately two kilometres south west of the site. The community contains a number of 19th century houses in an attractive setting along Lyons Creek. A memorial to the 1814 Battle of Cooks Mills is found at the edge of the hamlet.

SITE: INTEGRATED OPTION
Several farms are located in the site; four of them are heritage farmscapes although one appears to be abandoned. Other farmscapes are modern.

The 1 1/2 story house at map #21A is a brown stucco house probably dating from the 1860s - 1870s. On the property is a large gambrel roof barn, #21B, on a cement



MAP 15
NIAGARA FALLS: LP-1E SITE

10A	house
10B	barn
18	barn
19A	house
19B	barn
20A	house
20B	barn
21A	house
21B	barn

farmscape

Integrated site boundary

Partially integrated site boundary

block foundation. Between the house and barn is a distinctive hip roof drive shed.

The farmscape at map #10 is so sparse as to hardly rate such a definition. The modern siding and changes in the windows on the one story salt box house, #10A, make it difficult to date although it could be a mid-19th century structure. Behind the house is a gable roof barn, #10B, with a rear addition.

The house at map #19A is a 20th century structure. Adjacent to the house is a barn with a gable roof, #19B. Across the road stands a small barn, #18.

The bungalow at map #20A is a 20th century building. Near the house is a gambrel roof barn, #20B. The site appears to be abandoned.

The house at map 27A is a 19th century structure with a new addition on the east side. Near the house is a small gambrel roof barn, 27B.

SITE: PARTIALLY INTEGRATED OPTION

This site is much smaller but contains all structures of the integrated site with the exception of #27A,B and the barn at #18.

4.4.2 PI-27E (Physical/Chemical Treatment - Incinerator)

SITE VICINITY

The site vicinity contains rural elements in the southern portion but is industrialized and contains undeveloped land in the northern section. North of the Welland River and west of the QEW and east of the Hydro Canal are industrial or undeveloped industrial land. The main industrial complex visible from the site is a Cyamanid Plant. The south side of the river at the QEW is also in the process of industrialization. Several large factories have been built and much of the candidate site has been zoned for industrial land use.

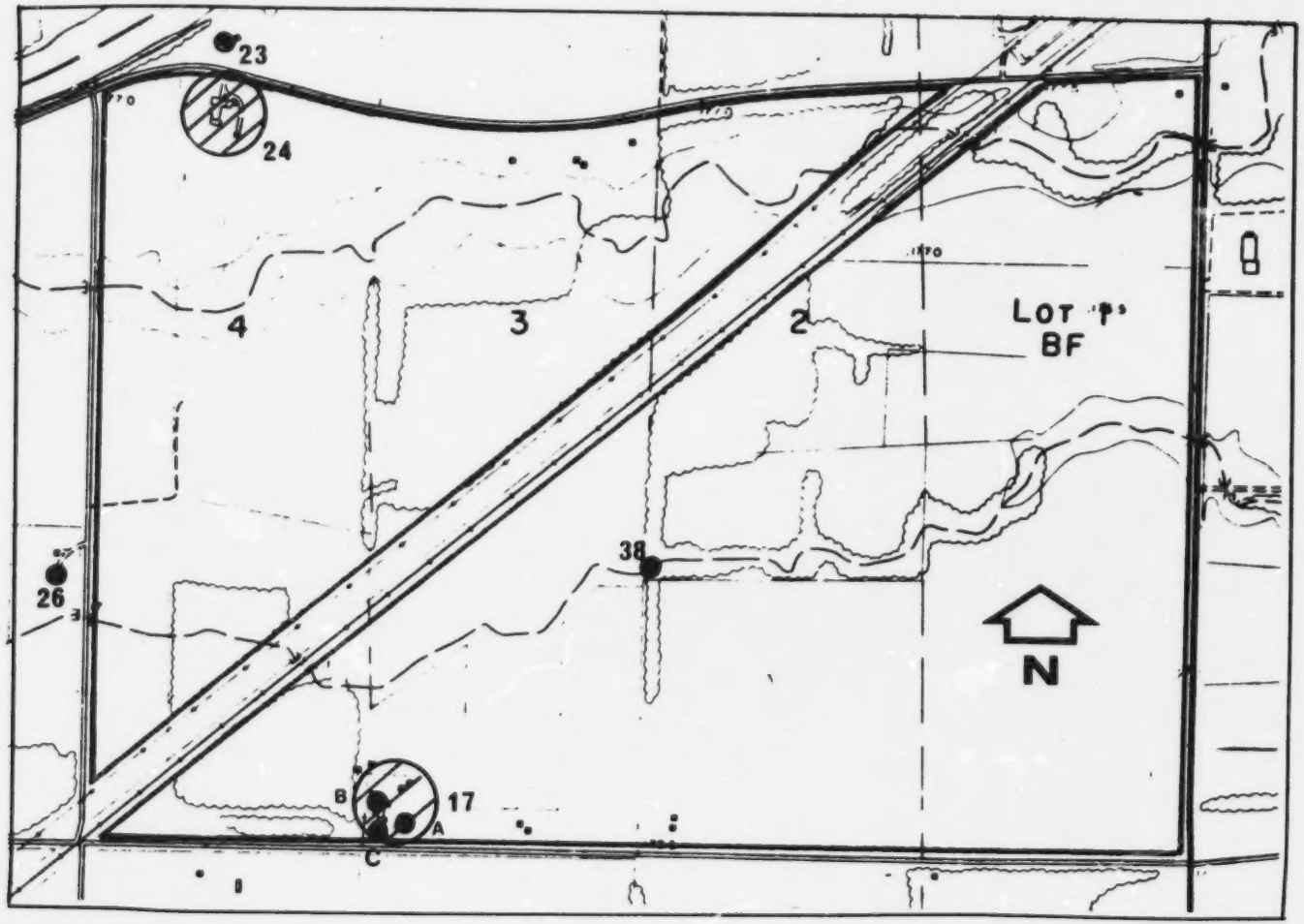
The oldest housing exists along both sides of the Welland River, indicating the importance of water routes for early transportation.

In the vicinity of the candidate site are two houses that date from the 1830s-1840s. The buildings at map #23 and #26 are both 1 1/2 story houses and are close to the road.

MAP 16
NIAGARA FALLS: PI-27E SITE

17A house
17B barn
17C barn
23 house
24 barn ruins
26 house
38 bridge (abandoned)

farmscape



SITE

The only farmscape in the site, #17, contains a 20th century house, #17A. The farm includes a large barn complex consisting of two connected gambrel roof barns, #17B. A smaller gable roof drive shed, #17C, is also within the farmscape.

At map #24 are ruins of a farm consisting of two silos and three frame buildings in various states of decay.

Near the middle of PI-27E is a 20th century concrete bridge, #38; a remnant from a former road.

Cutting diagonally across the site is a railway and hydro transmission line. The Conrail rail line was originally double tracked but one line was removed in the 1970s.

Much of the site is zoned for industrial development and presently contains one modern warehouse.

CHAPTER 5
OWMC FACILITY AND HERITAGE FEATURES

5.1 INTRODUCTION

The proposed OWMC facility consists of three components; an incinerator, physical/chemical treatment plant and a landfill. A variety of siting options are being considered by OWMC in which the three components may be located on a single site (integrated siting option) or distributed among two sites (partially integrated siting option).

Since the basic design criteria are known, it is possible to predict the impact of the facility upon heritage features. Both potential adverse and beneficial impacts can be identified for sites and site vicinities. Section 5.2 discusses impacts that can affect the basic acceptability of a candidate site. The section also indicates possible types of mitigation that can be applied to adverse impacts.

5.2 FACILITY IMPACTS

5.2.1 CANDIDATE SITES

5.2.1.1 Adverse Impacts

5.2.1.1.1 Land Use Changes. Changing land use (agricultural to industrial) might lead to the redundancy of heritage structures (houses, barns). Unless the structure can be adapted to a new function, the heritage feature may be abandoned or demolished.

Comments: A variety of mitigation options are available such as reusing houses for site offices and reusing barns and other buildings for storage.

5.2.1.1.2 Facility Construction. Construction of roads, landfill and processing facilities might require removal of heritage structures.[1]

Comments: Heritage structures should be evaluated during initial design stages of the facility to determine if the facility can be modified to accommodate significant features.

5.2.1.1.3 Screening Site. All site vicinities are very flat. Berm walls and other screening techniques used to obscure the facility could in themselves be unsympathetic to the heritage landscape.[2]

Comments: Careful thought should be given to the design of screens to harmonize with existing heritage landscapes.

5.2.1.1.4 Facility Design. As an industrial structure, the design of the treatment facility may be out of character with surrounding heritage landscapes.

Comments: LF-2N and PI-27E are designated for industrial development. If of appropriate design, the facility would be visually compatible with other designated industrial uses of the property. For the other, more rural sites, the choice of designs sympathetic with the surrounding heritage landscape would minimize visual intrusion in the area.

5.2.1.2 Beneficial Impact
Heritage features within the site may be preserved and reused.

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1) For possible site layouts see: Monenco Limited. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Engineering, 1985.

2) Institute of Environmental Research Inc. Site Selection Process. Phase 4A. Selection of a Preferred Site(s) - Social Analysis. Appendix Volume 3 - Visual Impact Assessment, 1985.

5.2.2 STUDY AREA

5.2.2.1 Adverse Impacts

5.2.2.1.1 Access Road Improvements. Some access roads may be widened and improved. In a few cases rights-of-way may be widened. Although this construction will not result in removal of heritage structures, it may cause removal of trees and place heritage buildings close to roads.[3]

Comments: Road improvements should be undertaken in ways that will minimize damage to streetscapes.

5.2.2.1.2 Vehicle Vibrations. Vehicle traffic generated by the facility may cause increased traffic vibrations in buildings. This may lead to the long term destruction of heritage structures.

Comments: Road vibration studies with regard to impact on heritage buildings have not been conducted so potential impact of this issue is not known.

5.2.2.1.3 Facility Process. Processing of waste products may produce vibrations or poor air quality that could accelerate deterioration of heritage structures.

Comments: Process vibration and air quality studies with regard to heritage structures have not been conducted so potential impacts of these issues are not known.

5.2.2.1.4 Social Desirability of Area Desirability of living in the site vicinity may decline if people perceive the facility as a high risk area. Increased noise, dust and visual factors may also decrease desirability of living in the vicinity. These factors may make housing stock, including heritage structures, redundant and lead to their abandonment or demolition.

Comments: Other studies conducted for the OWMC suggest no long term trend of people moving from the area surrounding the proposed facility is anticipated.[4]

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3) M.M. Dillon Ltd. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Transportation, 1985.

4) Institute of Environmental Research Inc. Site Selection Process. Phase 4A. Selection of a Preferred Site(s) - Social Analysis, 1985.

5.2.2.1.5 New Industry. New industry may locate in the site vicinity. This may lead to visual or physical disfigurement or removal of heritage structures.

Comments: It is understood that the presence of the OWMC facility is, by itself, not an incentive to attract industry. As well, OWMC will not encourage industrial development in the vicinity of the facility. Appropriate municipal planning will be needed to control development.[5]

5.2.2.1.6 Employment Opportunities. Increased employment opportunities from the facility may cause new subdivision development and the subsequent removal or disfigurement of heritage structures.

Comments: Studies undertaken for OWMC indicate that the number of new employees expected to relocate in the local municipality is small and can be largely absorbed by existing accommodations. Appropriate municipal planning will be needed to control unexpected development.[6]

5.2.2.1.7 Facility Stack. Sites PI-1N, PI-13N, LF-3C, LF-9C, LF-1E and PI-27E require a 60 to 100 metre stack. This stack will create a visual impact on the heritage landscape of the site vicinity.

Comments: There are no changes that could be made to reduce this impact.

5.2.2.2 Beneficial Impacts

-An increased awareness of heritage resources may develop in the site vicinity.

-New industry and employment opportunities may generate demands for housing and potential reuse of existing heritage structures. (See 5.2.2.1.6)

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5) ibid.

6) ibid.

5.3 BASIC ACCEPTABILITY

Appropriate heritage planning first determines the significance of identified features. The second stage is to establish a threshold of acceptability above which one would have to recommend against development of a site. The threshold of basic acceptability is determined by the heritage significance of the impacted features and by mitigation options available for that feature. In practice there are few situations for which no adequate mitigation is possible and the only recourse is to avoid the site.

No OWMC candidate site or site vicinity contains structures of great heritage importance. Therefore no recommendation had to be made to avoid a site because of significant heritage features. Nevertheless heritage features noted in the sites are unique structures. They have intrinsic heritage value by being old, irreplaceable, and containing information about how people lived and worked in the past. Although some sites contained strong images of 19th century farmscapes, heritage features in general are typical of structures still relatively common in southern Ontario.

It is conceivable that additional detailed research may establish that some features are of particular heritage significance. This event appears unlikely based on the research and detail from field surveys undertaken for this study. In any case appropriate mitigation appears feasible even for features that may assume greater significance upon further study.

5.4 FEATURE MITIGATION

Since no recommendation was made by the historical consultant to reject a site, appropriate mitigation should be developed for individual features in each site. Appropriate mitigation involves striking a balance between the heritage feature and the proposed facility that will impact that feature. Some features will be more difficult or expensive to mitigate than others. For example, moving a brick building is more difficult than moving a frame structure.

Mitigation for structures runs the gamut from reuse of buildings to recording a structure as it is demolished. The preferred goal of managing any heritage feature is to maintain the feature on its original location and in its current use. Mitigation options are described in Appendix 2.

Although many buildings in the sites are heritage structures simply because of age, they still should be considered for retention on site. Many are still serviceable buildings and could be recycled for modern usage. In a worst case situation in which a site must be cleared of all structures, mitigation becomes very important. Recording structures ensures that some information of historic construction techniques and living styles is retained. An objection to complete removal of all structures is that the provincial supply of those features is then diminished, making remaining examples that much more important.

Appropriate site mitigation of adverse effects for all heritage features appears to be feasible. This has assumed that the most appropriate mitigation will be adopted. In order that all mitigation options remain possible, all heritage features within the preferred site should be incorporated into every level of site planning. Retention and reuse of structures should be considered whenever possible. Reuse is preferable to removal since a reused structure maintains some continuity with former heritage landscapes.

CHAPTER 6
EVALUATION OF SITE SIGNIFICANCE

6.1 RATING OF SITE VICINITIES

6.1.1 INTRODUCTION

Site vicinities were evaluated by the overall factor of heritage landscape. Three indicators were used to measure the intensity of this factor. First, the average values of site vicinity features were ranked (Section 6.1.2). Second, the density of structures per square kilometre were ranked by site vicinity (Section 6.1.3). Finally, the OWMC facility was examined relative to the historic land use of each site vicinity (Section 6.1.4).

For evaluation purposes candidate sites were included as part of the site vicinities. Since the inventory produced a broad landscape assessment, the two areas could not be separated. A total of 297 structures were evaluated in the inventory. An additional 61 features were noted but not evaluated (See Section 3.2.2).

TABLE 6.1: Number of Features

Site	Inventoried	Others	Total Features	Comment
PI-13N	52	6	58	
LF-3C	45	11	56	
PI-1N	45	5	50	
LF-4N	42	9	51	
LF-1E	36	10	46	not including 16 features in Cooks Mills (*)
LF-9C	34	3	37	
PI-27E	22	11	33	
LF-2N	21	6	27	not including 30 features in Meadowvale (*)
Total	297	61	358	

(*) see Section 2.2.1.1

6.1.2 AVERAGE VALUE OF HERITAGE FEATURES

Table 6.2 rates the combined architectural, historical and landscape value of each site vicinity as gathered through the field inventory. Figures in the table are averages of scores for all inventoried features in each site vicinity. The higher the average value, the greater the relative interest of heritage features.

TABLE 6.2: Average Value of Inventoried Features

Site	Average	Rank
PI-1N	30.7	1
PI-13N	29.2	2
LF-4N	28.4	3
LF-2N	27.0	4
LF-3C	26.7	5
LF-1E	25.9	6
LF-9C	25.5	7
PI-27E	23.0	8

Based on the average importance of structures in the site vicinities, PI-27E has the lowest value and therefore would experience the least impact.

6.1.3 DENSITY OF STRUCTURES

While the average value of each site vicinity rates the importance by structures, it does not indicate how pronounced these features are in the landscape. Table 6.3 includes inventoried features and those structures identified but not quantified during the field survey.

Some site vicinities contain greater remnants of 19th century features than others. LF-2N may have interesting structures but the site vicinity has the lowest density

TABLE 6.3: Density of all Features per Square kilometre

Site	Area (km sq.)	Features /km	Rank
PI-13N	24.0	2.4	1
PI-1N	23.5	2.1(*)	2
LF-4N	24.9	2.0	3
LF-9C	18.9	2.0	3
LF-1E	24.5	1.9	4
LF-3C	29.2	1.9	4
PI-27E	20.2	1.6	5
LF-2N	20.4*	1.3(#)	6

* not including Cooks Mills
\# not including Meadowvale Village

(Meadowvale Village has been excluded from the assessment), thus diminishing the visual impact of a heritage landscape. The Milton sites, on the other hand, contain not only evocative 19th century structures (Table 6.2) but numerous examples of them as well (Table 6.3).

Therefore based on density of heritage structures in the site vicinities, LF-2N in Mississauga has the lowest density of heritage features and thus the least visual impact of a rural heritage landscape.

6.1.4 HISTORIC LANDSCAPES

Changes in how people use land is an ongoing historical process. For any particular parcel of land both types of land use and rates of change will vary over time. The type and rate of change of land use produces distinctive heritage landscapes.

In this report, the term historic land use is not used in the modern sense of describing permitted or zoned uses for individual parcels of land. Rather, historic land use describes how previous uses of the land are still visible in the present landscape.

Sometimes the type and rate of change of historic land uses may be minor. A farmer switching from grain to dairy may change his type of barns and crops but the overall land use is still agricultural. At other times the type and rate of change may be dramatic. One of the most profound changes in land use in all site vicinities occurred in the settlement period up to the 1850s. Most of the natural landscapes were converted into agricultural land.

Most people that undertake substantial changes in the human environment rarely relate the proposed development to its position in the "great sweep" of history. The following assumptions provide some guidelines with regards to the ongoing historic evolution of landscapes:

i. if land use is not changing, the proposed activity should be compatible with current land use such that the activity will not alter the area's predominant landscape;

ii. if land use is changing, the proposed activity should be compatible with rates of change and ultimate new landscape of area;

iii. if the proposed activity does not fall into the previous categories, it should be assessed to determine if the activity will:

(a) be isolated and not create an instability in land use.

(b) create an instability that will result in an inappropriate new landscape. In this case the proposed facility may be undesirable.

The assumptions described above were applied descriptively to the eight site vicinities. Three categories were considered; facility inappropriate with existing trends in historic landscapes (rank 1), facility inconsistent with existing trends in historic landscapes (rank 2), and facility consistent with existing trends in historic landscapes (rank 3). This information is presented in Table 6.4.

TABLE 6.4: Historic Landscapes

Site	Rank
LF-9C	1
LF-3C	1
PI-1N	2
PI-13N	2
LF-4N	2
LF-1E	2
LF-2N	3
PI-27E	3

Based on the continuity of historic landscapes, LF-3C and LF-9C are the least preferred sites for the OWMC facility. The facility will be a twentieth century industry in a 19th century rural landscape. Heritage features in both LF-3C and LF-9C suggest that they are historically stable agricultural communities. Thus the facility would create a sudden break in historical continuity.

Changes appear to be occurring in the historic landscapes of PI-1N, LF-4N, PI-13N and LF-1E. Historically these areas have been agricultural but now are in the process of gradual change to residential areas. The industrial nature of the OWMC facility appears to be inconsistent with the historic landscapes of these site vicinities.

Historically, LF-2N and PI-27E were rural, agricultural areas. However, in recent years land in the vicinity of these candidate sites has experienced urban growth. The proposed OWMC facility, an industrial complex, appears to be consistent with the evolving historic landscapes permitted by the industrial designation of the LF-2N and PI-27E sites.

6.1.5 CONCLUSION

It is possible that the OWMC facility will have long term visual, economic and cultural impacts that may affect heritage features of the site vicinity. Since the OWMC cannot regulate land use or direct mitigation in the site vicinity, it would be prudent, from a heritage point of view, to choose a site vicinity with the least heritage impact. The three indicators of the heritage landscape were considered to be of equal value.

TABLE 6.5: Summary of Site Vicinity Indicators

Site	Rank Number Table 6.2	Table 6.3	Table 6.4	Rank (greatest impact)
PI-1N	1	2	2	1
PI-13N	2	1	2	1
LF-4N	3	3	2	2
LF-3C	5	4	1	3
LF-9C	7	3	1	4
LF-1E (*)	6	4	2	5
LF-2N (#)	4	6	3	6
PI-27E	8	5	3	7 (least impact)

* does not include village of Cooks Mills
\# does not include village of Meadowvale

PI-27E is the preferred site vicinity from a heritage view point. Not only does it contain the lowest average value for heritage structures (23.0), but the total density of 19th century is also low (1.6/sq. km). The site vicinity also appears to be within an emerging industrial area.

Conversely, PI-1N and PI-13N are the least preferred site vicinities from a heritage view point.

6.2 RATING OF CANDIDATE SITES

6.2.1 INTRODUCTION

As with site vicinities, candidate sites were evaluated by the factor of heritage landscape. Three indicators were used. First the average value of scores for inventoried features were ranked by site (Section 6.2.2). Second, the number of features per site were ranked (Section 6.2.3). Third, the number of farmscapes were ranked (Section 6.2.4).

6.2.2 AVERAGE VALUE OF HERITAGE FEATURES

The values in Table 6.6 measure the architectural, historical, and landscape value for each site. Features in both sites and site vicinities were measured by the same criteria.

TABLE 6.6: Average Value of Inventoried Features

Site	Average	Rank
PI-1N	33.7	1
LF-2N	27.0	2
LF-4N	26.7	3
PI-13N	26.3	4
LF-1E (I)	22.0	5
LF-3C	21.0	6
LF-1E (P)	20.5	7
LF-9C	19.0	8
PI-27E	0.0	9

(I) Integrated LF-1E site
(P) Partially Integrated LF-1E site

6.2.3 TOTAL NUMBER OF FEATURES ON SITES

Sites were also compared by the number of potential structures that could be impacted by the proposed facility (Table 6.7). The inventory assessed only houses, institutional and industrial/commercial structures. Within the sites barns and other visible man-made structures were identified. The greater the number of structures, the more difficult it will be to mitigate adverse conditions.

TABLE 6.7: Features on Sites

Site	Inventoried Features	Additional Features	Total Features	Rank
LF-1E (I)	3	6	9	1
LF-4N	3	4	7	2
PI-13N	3	4	7	2
LF-2N	3	3	6	3
LF-1E (P)	2	4	6	3
PI-1N	3	2	5	4
LF-9C	2	3	5	4
LF-3C	1	3	4	5
PI-27E	0	3	3	6

(I) Integrated LF-1E site
(P) Partially Integrated LF-1E site

6.2.4 FARMSCAPES

Groupings of buildings may produce distinctive rural landscapes. In assessing candidate sites the number of farmscapes were ranked in Table 6.8.

TABLE 6.8: Farmscapes on Sites

Site	# of Farmscapes	Rank
LF-1E (I)	4	1
LF-1E (P)	4	1
LF-4N	3	2
PI-13N	3	2
LF-2N	3	2
LF-3C	2	3
PI-1N	2	3
LF-9C	2	3
PI-27E	1	4

(I) Integrated LF-1E site
(P) Partially integrated LF-1E site

6.2.5 CONCLUSION

Based on the number of heritage structures and farmscapes to be impacted, PI-27E in Niagara Falls will be least affected by the OWMC facility. Sites LF-4N and LF-2N are the least preferred sites based on heritage

TABLE 6.9: Summary of Site Indicators

	Rank Number			
Site	Table 6.6	Table 6.7	Table 6.8	Rank (greatest impact)
LF-4N	3	1	2	1
LF-2N	2	2	2	1
LF-1E (I)	5	1	1	1
PI-13N	4	1	2	2
PI-1N	1	3	3	2
LF-1E (P)	6	2	1	3
LF-3C	5	4	3	4
LF-9C	7	3	3	5
PI-27E	8	5	4	6

(I) Integrated LE-1E site
(P) Partially integrated LF-1E site

characteristics. The three indicators of heritage landscape were considered to be of equal value.[1]

6.3 RANKING OF EIGHT SITES

The optimal site should take into account factors in both the site and site vicinity. Impacts of the OWMC facility on the site appear to be immediate, severe and mitigatable. Impacts within the site vicinities appear to be long term but not severe. Therefore all indicators were grouped into Table 6.10 to develop a ranking of the combined sites and site vicinities. The rank values of factors in the sites and site vicinities were assumed to be equal.

Table 6.10 indicates that PI-27E is always the preferred candidate site when evaluated by both site and site vicinity. LF-9C is always the second most preferred. PI-1N and PI-13N contain the least preferred site vicinities and the second least preferred sites.

TABLE 6.10: Rank of Combined Sites and Site Vicinities

	Rank Number						
	Site Vicinities			Sites			Rank
	Table	Table	Table	Table	Table	Table	(greatest
Sites	6.2	6.3	6.4	6.6	6.7	6.8	impact)
PI-1N	1	2	2	1	4	3	1
PI-13N	2	1	2	4	2	2	1
LF-4N	3	3	2	3	2	2	2
LF-1E (*)(P)	6	4	2	5	1	1	3
LF-2N (#)	4	6	3	2	3	2	4
LF-1E (*)(I)	6	4	2	7	3	1	5
LF-3C	5	4	1	6	5	3	6
LF-9C	7	3	1	8	4	3	7
PI-27E	8	5	3	9	6	4	8 (least impact)

* does not include village of Cooks Mills
\# does not include village of Meadowvale
(I) Integrated LF-1E site
(P) Partially integrated LF-1E site

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1) Relevant indicators from this study were applied in the subsequent social analysis. At that time indicator weights were reviewed and revised. See: Institute of Environmental Research Inc. Site Selection Process. Phase 4A. Selection of a Preferred Site(s) - Social Analysis, 1985.

A few individual structures scored highly in the inventory. However, no single features, either quantified or non-quantified, were of such importance that any OWMC site had to eliminated due to heritage concerns. This assumes that appropriate mitigation is applied to affected features.

6.3.1 RANK ONE: PI-13N (Greatest Impact)

PI-13N in the Town of Milton does not contain any single outstanding features but rather the area contains fine examples of 19th century architecture.

As with the other two Milton sites, the OWMC facility might be inconsistent with the historic land use of the site vicinity. The visual impact could be minimized by screening of the facility. However, since the incinerator will require a 60-100 m stack, the visual impact on the heritage landscape will always be pronounced. Some additional widths of road rights-of-way will be required along the Fourth Line. This additional land and widening of existing pavements may affect streetscapes.

Although all heritage features within the candidate site should be considered for reuse and retention, special attention should be given to the house at #27A,Map 12.

6.3.2 RANK ONE: PI-1N (Greatest Impact)

PI-1N and PI-13N are the least desirable locations for an OWMC facility from the point of view of heritage landscapes. PI-1N contains a large number of significant buildings within the site vicinity and the site contains two particularly interesting houses.

As with the other Milton sites the facility might be inconsistent with the historic land use of the site vicinity. The visual impact could be minimized by screening. However, since an incinerator will require a 60-100 m stack, the visual impact will always be pronounced. No additional widths of road rights-of-way are proposed but widening the pavement may affect streetscapes.

Within the candidate site all heritage features should be considered for retention and reuse but two houses in particular at #12 and #25A, Map 11, should receive special attention.

6.3.3 RANK TWO: LF-4N

The LF-4N site vicinity does not contain any single outstanding features but rather the area contains fine examples of 19th century architecture.

The OWMC facility might be inconsistent with the historic land use of the site vicinity. The visual impact could be minimized by screening the facility. No additional widths of road rights-of-way are proposed but pavement widening may affect streetscapes.

6.3.4 RANK THREE: LF-1E; INTEGRATED SITE

There are no single outstanding features to LF-1E in Niagara Falls. Rather, the site vicinity contains fine examples of 19th century architecture.

The village of Cooks Mills could be impacted in the same manner as Meadowvale in LF-2N. The "village" quality of the community could be lost if there was a substantial movement of people into or out of the community. The main appeal of the village is its setting and collection of buildings rather than particularly significant structures.

The OWMC facility might be inconsistent with the historic land use of the site vicinity. Visual impact could be minimized by means of screening. However, since the incinerator will require a 60-100 m stack, the visual impact on the heritage landscape will always be pronounced. Anticipated road improvements could alter some streetscapes.

The candidate site contains several heritage features although none are of special importance. All such structures should be evaluated for possible reuse.

6.3.5 RANK FOUR: LF-2N

While the LF-2N site vicinity contains important heritage structures, the area has relatively few of them. Thus the heritage landscape is not as pronounced as in other site vicinities. Although the site vicinity is presently rural, it is within a rapidly urbanizing area. The OWMC facility would probably not visually affect the heritage landscape any more severely than other facilities consistent with zoning for the candidate site.

The principal heritage concern within the site vicinity is the village of Meadowvale. Members of the village's Conservation Review Committee have indicated that some residents might move out if the facility is built. If this occurred the integrity of the village would be jeopardized. At this time it is impossible to predict to what extent this would happen. The village is sufficiently far from the site to be visually unaffected by the waste treatment facility.

Within the site all heritage features should be considered for retention and reuse. Appropriate mitigation is particularly important for the house at #6A and for the house at #9, Map 9, just outside the candidate site.

During Phase 4A but after research for this report was completed the hydrogeologic consultant determined that site LF-2N failed to provide natural containment. Since this decision occurred after research for the heritage report was complete, this study includes an analysis of LF-2N although it was dropped from further consideration as a candidate site.[2]

6.3.6 RANK FIVE: LF-1E; PARTIALLY INTEGRATED SITE

The only difference between the partially integrated LF-1E site and the integrated site (see 6.3.4) is that the integrated site contains more structures that would be impacted by the OWMC facility. The quality of the heritage landscape is the same.

6.3.7 RANK SIX: LF-3C

As with LF-9C, the OWMC facility could be inconsistent with the historic land use of the site vicinity. The visual impact could be minimized by means of screening. However, since the incinerator will require a 60-100 m stack, the visual impact on the heritage landscape will always be pronounced.

Road improvements, particularly to Krick Road and Elcho Road could alter streetscapes.

All heritage features within the site should be considered for reuse and retention. Special attention should be given to avoiding negative impacts on the Elcho Church, #25, Map 13.

6.3.8 RANK SEVEN: LF-9C

LF-9C is the second most preferred candidate site since it ranked just behind PI-27E both in evaluation of site and site vicinity. However, the site is less desirable from a heritage view point inasmuch as this would place an

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2) Gartner Lee Associates Ltd., Site Selection Process Phase 4A: Selection of a Preferred Site(s) Geologic, Hydrogeologic and Geotechnical Considerations, 1985 and M.M. Dillon Ltd., Site Selection Process, Phase 4A: Interim Site Selection Report. Candidate Site LF-2N, 1985.

industrial facility within a historically stable agricultural area.

The visual impact could be minimized by means of screening. However, since the incinerator will require a 60-100 m stack, the visual impact on the heritage landscape will always be pronounced. No significant road improvements are anticipated within the site vicinity.

The candidate site contains some heritage structures although none are of special importance. Nevertheless these features should be evaluated for possible reuse.

6.3.9 RANK EIGHT: PI-27E (Least Impact)

Of the eight sites, heritage features in PI-27E would be least impacted by the OWMC facility both within the site and site vicinity.

Although the site is presently rural, it is within an urbanizing area and much of the land is designated for industrial use. The proposed OWMC facility would probably not visually affect the heritage landscape any more severely that other facilities consistent with the industrial designation for the site. Screening could minimize the visual impact of the facility on the heritage landscape although a large stack required by the incinerator could not be obscured. No road improvements are anticipated for this site.

The retention and reuse of heritage features within the candidate site should be considered. As well, appropriate mitigation for houses at #23 and #26, Map 18, just outside the site should be considered.

6.4 SITING OPTIONS

This study examined the eight candidate sites individually. There are, however, several siting options for which the OWMC facility is designed to occupy two sites. LF-1E has been evaluated for siting options consisting of an integrated and partially integrated facility. This was done because the size of the site varied depending upon the siting option. In all other cases, the site size remained the same regardless of siting options.

IER incorporated the data of this study into their own social analysis. The evaluation of partially integrated siting options was undertaken in consultation with Historica Research Limited.

6.5 RECOMMENDATIONS FOR PHASE 4B STUDY

While adequate information was available to facilitate comparison between the eight candidate sites, additional information and analysis is required once the preferred OWMC site has been selected.

i. **Right-of-way Improvements:** The right-of-way of the access road from the 400 series highway should be assessed beyond the site vicinity to determine the impact of road improvements on heritage features.

ii. **Site Structure Inventory:** A more detailed structural inventory should be conducted on individual buildings within the preferred site. In particular, the interior of buildings should be assessed for heritage features.

iii. **Site Vicinity:** Studies should be undertaken to determine what municipal land use restrictions are appropriate around the OWMC facility to control unexpected development that may have a potential impact on heritage structures.

iv. **Vehicle Vibration:** Vibration studies of road traffic should be undertaken to determine what effect there would be, if any, on heritage structures.

v. **Facility Process:** Vibration and air quality studies of the physical/chemical treatment process and incinerator should be undertaken to determine what effect there would be, if any, on heritage structures.

vi. **Movement of People:** Property values and the potential movement of people from, or into, the site vicinity should be examined with respect to the potential impact, if any, on heritage structures.

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APPENDIX 1
CRITERIA FOR EVALUATION OF HERITAGE FEATURES

MEASURE OF HERITAGE VALUE

Every heritage feature is unique. The value placed on the feature depends upon certain facts such as age, style or association with famous people or events. As well, features are judged by subjective values such as an individual's personal taste and knowledge.

As long as a set of criteria, based both on fact and subjective evaluation, are applied consistently it is possible to produce a quantitative measure that can compare the heritage value of structures.

DEVELOPMENT OF NUMERIC SYSTEM USED IN THIS STUDY

The numeric system used in this study was adapted from the Parks Canada publication, The Evaluation Of Historic Buildings. The system emphasizes architectural characteristics of buildings. Therefore, the evaluation system has a bias against non-building heritage features such as bridges and monuments. Specialized buildings, especially barns, do not fit well into the numeric system used in this inventory. Thus barns, bridges, cemeteries, and specialized buildings were not quantified in this evaluation. Where appropriate they are described in the text.

Generally, no post 1914 structures were inventoried. Only a few exceptional sites dating after 1914 have been included.

It was impossible to obtain a perfect score in this inventory. No information on architects was found and it was therefore impossible to give any numeric value for this category. In other cases, the inventory category was based on subjective ratings. There is probably an instinctive bias

against awarding a "perfect" score in a subjective category. However, if the same bias is incorporated into all sites, the relative importance will be the same. In this case all inventory work was undertaken by one person and therefore relative values should be consistent.

All identified features are rural even if in some cases they are surrounded by urban areas. In two situations, LF-2N and LF-1E villages are located within the site vicinity. If all features in these villages had been inventoried, they would have suggested that the heritage landscape of the site vicinity was more important than those site vicinities without villages. Instead, the heritage value of a village is fairly localized and not applicable to the entire area. As well, the presence or lack of villages in other site vicinities was due to the manner in which study boundaries were drawn.

Therefore, individual heritage features within villages were not evaluated in the inventory. Instead, villages were treated as discrete heritage features and noted descriptively in the text.

A numeric score may obscure individual sites of historic significance. This is especially true in this case because possibly significant non-buildings such as bridges and barns were not quantified. Thus, during the field work all structures within candidate sites were visually measured against a wider variety of heritage criteria than given in the inventory form. For example structures more recent than the formal 1914 cut off date were considered, bridge design was examined, and barn and fences were assessed. This information was used in Table 6.7 to provide an additional measure of the heritage landscape.

INTERPRETATION OF FEATURE VALUE IN INVENTORY

The primary purpose of a numeric evaluation system was to facilitate comparisons of large site vicinities. A secondary function was to evaluate specific heritage features. The intent was to develop landscape values of how distinctive individual heritage landscape appeared to be.

The value given to each feature in the inventory have no meaning beyond this study. In this report, a quantitative measure has been applied to sites and site vicinities solely for the purpose of ranking the heritage features of the eight OWMC sites.

Included in the evaluation is a factor of how important features were in a regional and provincial nature. Therefore, although the inventory value is a comparative figure, it does include a measure of how features compare to other areas of the province. However, relating features from one region to the rest of the province can never be very exact since building types and styles vary across the province. These regional differences can be seen in buildings standing in the OWMC site vicinities. The Niagara region and the Halton/Peel region developed under different settlement and economic conditions.

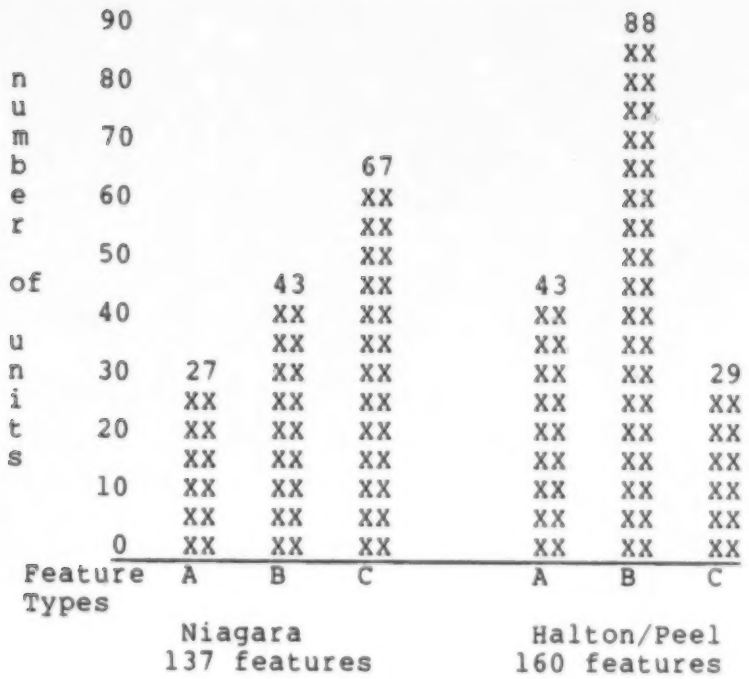
Grouping site vicinity features into three categories highlights the regional differences (See Table A-1 and Graph A-1). "A" features (score of 31 and greater) are structures of significant heritage interest. "B" features (score between 25 and 30) are structures of heritage interest. "C" features (Score of 24 or less) are structures of minimal heritage interest.

The Niagara Region has a large number of C structures, indicating that there are fewer heritage buildings of architectural or historic interest in this area. Most buildings are frame while brick is relatively uncommon. Many houses are quite small. Conversely, there are a great number of A buildings in the Halton/Peel region. Many of the houses are of brick and are relatively large.

TABLE A-1: A and B Features as a percentage of total inventoried features

Site Vicinity	%	Rank
Halton/Peel		
PI-1N	84	1
LF-4N	83	2
PI-13N	81	3
LF-2N	76	4
Niagara		
LF-1E	53	5
LF-3C	51	6
LF-9C	50	7
PI-27E	50	7

GRAPH A-1: A, B, C Features



These observations on material and house size suggests that the Niagara region experienced a lower level of economic development in the 19th century than did the Halton/Peel area. While farmers in Halton and Peel were prospering, and thus rebuilding their houses in the mid to late 19th century, their counterparts in Niagara were making do with simpler structures.

CRITERIA FOR EVALUATING HERITAGE FEATURES AND LANDSCAPES

Architectural/Engineering Importance (maximum score 40)

A structure may contain one or more of the following characteristics:

(i) Architect (rating: 8 4 2 0)

The work of, or reflects the work of, a major architect, designer. This criterion was not used as no architect designed buildings were noted in any of the site vicinities areas. Further research may identify architects for specific buildings.

(ii) Design (rating: 8 4 2 0)
An outstanding example of its architectural style or period. This may include exterior or interior features or both. [NOTE: interiors not examined in this inventory]

(iii) Construction (rating: 15 8 4 0)
An example of significant engineering or method of construction.

(iv) Style (rating: 20 10 5 0)
A typical, rare or unusual example of a particular period.

(v) Age (rating: 10 5 0)
A structure built in one of the following three time periods: before 1850; between 1850 and 1914; after 1914.

The year 1850 was chosen as the approximate end of the pioneer period in the site vicinities.

Generally, post 1914 structures were not inventoried. The year 1914 was chosen as the cut off date in order to reduce the number of features for analysis. This date is the approximate end of 19th century development. It is also just prior to the massive economic and social changes brought about by the automobile. Selected post 1914 structures were inventoried if they represented significant heritage features.

Historical Importance: (maximum score 30)

A structure may be associated with one or more of the following events:

(i) Person (rating: 20 10 5 0)
Associated with a person, or group of people, of local, provincial, national or international importance. Research to date indicated that no person of historic importance was associated with any site or site vicinity. Further research may determine significant historical figures may have lived in one or more of the candidate sites.

(ii) Event (rating: 20 10 5 0)
Associated with an event or movement of local, provincial, national or international importance.

(iii) Context (rating 20 10 5 0)
Associated with the history of development of an area. For example, a church or farm house now surrounded by urban development may illustrate former cultural or economic life.

This category was used to highlight all non residential structures such as bridges and commercial, institutional and industrial structures.

Landscape Setting: (maximum score 20)

Refers to the relationship of a structure with its setting. This criteria measures if removal of a structure or addition of new ones, would damage the setting for one or more of the following reasons:

(i) Continuity (rating: 10 5 2 0)
Forms an essential part of a group of two or more related structures that define a historical period and contributes to the continuity of a street or area. This is an indication of how well the structure fits in with surrounding buildings.

(ii) Setting (rating: 10 5 2 0)
An essential element of an area which was laid out according to planning principals of the period. It may represent a particular land use type or a distinctive landscape. This is an indication of how well the structure fits with the surrounding landscape.

(iii) Landmark (rating: 10 5 2 0)
Forms an essential part of a distinctive skyline, defines or terminates a vista or is a landmark structure.

Integrity: (maximum score 10)

(i) Site (rating: 5 3 2 0)
The structure is on the original site or has been moved.

(ii) Alterations (rating: 5 3 2 0)
The structure has been significantly altered in a beneficial or negative manner.

APPENDIX 2
MANAGEMENT OPTIONS FOR HERITAGE FEATURES

PHYSICAL RETENTION OF STRUCTURES

1. RENOVATION

Sympathetically modernize building to carry out original function. In order that a building may continue in its original function, it is frequently necessary to modernize the structure to meet modern safety or business conditions. Not all aspects of a heritage structure are of the same significance and it is usually possible to renovate a building without interference with those features (such as design, materials, colour) that make the structure significant.

2. REUSE

Adapt feature for modern needs retaining heritage aspects of feature. Many structures are adaptable for uses other than their original intention. This can include both buildings and structures such as bridges and silos.

3. RESTORATION

Restore feature to condition of a former time period. Restoration is usually only undertaken for very significant structures in which it is considered important to recreate a particular era. Restoration is both expensive and time consuming.

4. PRESERVATION

Stabilize feature to prevent further deterioration. Unlike restoration, preservation maintains a structure without trying to achieve a specific time period. This can apply to both buildings and structures such as bridges and silos.

5. MOTHBALL

Stabilize the feature to prevent further deterioration. This is a "do-nothing" option for structures in which no obvious reuse can be found. The structure is stabilized until such time as a new use can be found. This can apply to both buildings and structures such as bridges and silos. Sometimes neglect is considered a mothball option. But simple neglect is impossible and the feature must be modified to achieve minimal health and safety standards. Neglect is not a recommended option for heritage features.

6. AVOIDANCE

The design of the proposed activity is modified to avoid heritage feature. If discussions occur early enough in the planning process, it is sometimes possible to develop plans to avoid the feature.

7. RELOCATE

Move feature from original site and retain using one of above options. Good heritage planning recommend that historic buildings should not be moved unless they cannot be preserved on the original site. Moving a building destroys the original context of the structure and thus should be undertaken only as a last resort for preserving a significant structure.

8. FINANCIAL INCENTIVES; CONSULTING ADVICE

Provide economic incentives to permit less economic use of heritage property. Provide advice to municipalities and private citizens in site vicinities to preserve identified heritage features.

RETAIN FEATURES

1. MONUMENTS/PLAQUES/SIGNS

Retain memory of feature as a monument, sign, etc. Monuments can be a very effective mitigation technique because they are both inexpensive and do not impose any rigid concept of the past on the viewer. A good monument provides enough information to allow the viewer to recreate the past in his mind. This technique will aid in interpretation of past events that are no longer visible.

2. TRACE FEATURE

Mark traces of former feature in the landscape by outlining the foundation or boundaries of the structure. A special type of monument is to trace the outline of a building or group of buildings that give the viewer a sense of the physical dimensions of the historic structure.

3. FRAGMENT FEATURES

Retain some physical remains of feature as monument. If a structure can not be retained in full, significant parts of the structure can be saved, either in place or moved, and function as a monument to the former historic activity.

4. TURN FEATURE INTO AN ARTIFACT

Preserve fragments of feature as a display or in a museum.

5. INCORPORATE ARCHITECTURAL FORM INTO NEW DEVELOPMENT

This technique has been used unconsciously throughout history to preserve the form of historic structures. New construction is built around the original structure that preserves historic elements such as shape and texture.

6. INCORPORATE FEATURE INTO RECREATIONAL AND/OR PARK SETTING

This technique is particularly useful for landscape features. This idea has been suggested in conjunction with a proposed sanitary landfill in Halton County. One idea is to place a museum within the buffer zone. This may reduce negative feelings towards the facility.

7. INVENTORY, RECORDING

Recording a structure involves research, a written report, photography and/or measured drawings. REcording is often undertaken if a structure is to be removed from its original site.

DEMOLITION

A feature may be completely removed if one of the following conditions is dominant:

1. A high significance feature for which physical retention is impossible. Such a structure should always be accompanied with some mitigative activity such as recording.

2. A medium significance feature for which preservation of physical remains is not considered essential. Usually this is accompanied by some mitigative activity such as recording.

3. A low significance feature in which no form of mitigative activity is considered necessary.

APPENDIX 3
LAND USE HISTORY OF SITE VICINITIES

1. INTRODUCTION

The eight candidate sites selected by the Ontario Waste Management Corporation lie within four municipal jurisdictions; City of Mississauga, Town of Milton, Township of West Lincoln and City of Niagara Falls. The four municipalities are located within two discrete areas of historical development.

One historical area is the Regional Municipalities of Peel and Halton. Site LF-2N is within the City of Mississauga, in the Regional Municipality of Peel. Formerly this was the township of Toronto in Peel County. Sites LF-4N, PI-1N and PI-13N are in the Town of Milton, in the Regional Municipality of Halton. These sites were formerly in the Townships of Trafalgar and Nelson in Halton County.

The second historical area is the Regional Municipality of Niagara. Sites LF-3C and LF-9C are located within West Lincoln, in the Regional Municipality of Niagara. Formerly these sites were in the Township of Gainsborough in Lincoln County. LF-3C also contained a small portion of Wainfleet Township. Sites LF-1E and PI-27E are located within the City of Niagara Falls, in the Regional Municipality of Niagara. These sites were formerly in the Township of Crowland in Welland County. PI-27E also contained parts of Stamford and Willoughby Townships.

The historical developments of the eight sites has been described with reference to the two geographic areas of Halton/Peel and Niagara.

POLITICAL HISTORY

The first political designation that included all eight site vicinities was the "Nassau District", established in 1788. Nassau encompassed a huge tract of land along the Lake Ontario shore. Boundaries were readjusted in 1791 and the

name changed to the Home District. In 1798 the Niagara District which included the later Lincoln and Welland Counties was separated from the Home District. Later, in 1816, Halton and Wentworth Counties were separated to form the Gore District.

Within the Districts, and later counties, townships and lots were surveyed as necessary to provide a land ownership system for settlers.

In 1851 the district system was abolished in favour of the county system. Lincoln, Welland and Halton became separate counties. The Home District became the United Counties of Ontario, York and Peel but this was not a popular arrangement with residents. By the 1850s settlement had progressed to a level that made a united government impractical for such a large area. Agitation for separate counties was almost immediate and Ontario County became independent very shortly. But York and Peel Counties continued to function under a united government until 1866 when they were finally separated.

The administrative system consisting of township, incorporated community and county governments was identical to the political system established in the rest of southern Ontario. This type of government adequately served the needs of the predominantly rural population for over a hundred years.

By the 1960s rapid urbanization of the Toronto and Hamilton region began to strain the ability of the County system to serve Peel and Halton. Consequently, in 1974 the Regional Municipality of Peel was created using the former political boundaries of Peel County. The site vicinity became part of the City of Mississauga.

In 1974 the Regional Municipality of Halton was created from Halton County. The site vicinity in Nelson and Trafalgar Townships became part of the Town of Milton.

In the Niagara Region similar urban pressures led to the introduction of the regional municipality system. In 1970 the Regional Municipality of Niagara was created. Gainsborough Township became part of the Township of West Lincoln. The portion of the site vicinity in Crowland Township became part of the City of Niagara.

SURVEY SYSTEM

The lands that formerly included Lincoln and Welland Counties were purchased from the Mississauga Indians in 1792. Gainsborough (Lincoln County) and Crowland (Welland

County) Townships were surveyed in 1795. The single front survey system was used that produced square concessions with lots of 200 acres (80 hectares) each. The Welland River produced irregular shaped lots. Stamford Township, north of the Welland River, however, was not surveyed until 1813. The front and rear system was used producing a rectangular concession and 100 acre (40 hectares) lots. Welland County was surveyed into eight townships while Lincoln was surveyed into seven townships.

Peel and Halton Counties were purchased by the Crown from the Mississauga Indians in two stages. The first purchase in 1805 included all land south of Eglinton Avenue - Lower Base Line Road while the second purchase of October, 1818, included the rest of the future counties. The first Mississauga purchase was surveyed in 1806 by the single front system. This produced similar lots to those of Lincoln and Welland Counties of 200 acres (80 hectares) in a square concession. The second Mississauga purchase was surveyed by the double front system that produced a rectangular road pattern and lots of 100 acres (40 hectares). These road patterns are still visible today. Peel County was surveyed into five townships of which the former Toronto Township is in the site vicinity. Halton was surveyed into four townships of which Trafalgar and Nelson are in the site vicinity.

2. MISSISSAUGA - MILTON SITE VICINITIES

SETTLEMENT HISTORY

Settlement of Peel and Halton Counties occurred simultaneously. The first settlers arrived as soon as the land had been surveyed. But in the beginning settlement proceeded slowly. For example, by 1817 Trafalgar had only 548 people while Nelson Township contained 476. In 1820 Peel County was still largely vacant land. By 1842 95 percent of the land in Peel had been taken up but almost 40 percent was held by non-residents and undeveloped. This situation, which was by no means unique, slowed development of the area by artificially limiting the population of the county and retarding construction of rural facilities such as roads and mills.

Nevertheless, the pioneer period was completed by the 1850s. Within another twenty years the counties were fully populated. No new farm land was available and sons and aspiring farmers had to look farther west for land.

Peel and Halton Counties contained excellent farm land. In 1880 Toronto and Trafalgar Townships were considered to

have 75% "first class land" and 25% "second class land". Nelson had 50% first class and 25% second class land. By the 1880s Peel had the largest percentage of cleared land of any county in Ontario. Seventy eight percent of the farmland was cleared compared to a provincial average of 49 percent.

Early agriculture in the County was of a subsistence nature, typical of the pioneer period of settlement. Settlers produced enough for their own needs and raised a little extra to purchase those supplies they could not manufacture. The first market oriented agricultural period in Peel County was a wheat growing era lasting from the 1830s until the 1860s. High prices made wheat almost a monoculture during this period. During the 1850s a transition began into mixed farming. This change occurred in part because soil exhaustion and disease led to better agricultural practices. The collapse of wheat prices and later the demand for other products stimulated by the Civil War also helped to encourage diversity. Nevertheless, farms in townships of the site vicinity continued to be primarily grain producers.

During the 1870s and 1880s the dairy industry developed and cheese manufacturing became a major industry. Toronto was close enough to be a market for fresh milk from Peel County.

The close proximity of Hamilton and Toronto encourage some market gardening in the counties. Toronto in particular, by the late 1800s was an important market for Peel County produce. Farmers in the south part of the county were close enough to sell produce in stalls at the St. Lawrence Market in Toronto. Farmers from north of Brampton were known to have made the return trip in a day.

The site vicinities are primarily flat with no topographical limits to farming. Fletcher's Creek cuts across part of the LF-2N site but is small. Creeks in the Milton area have carved deep ravines across some of the farms. The major waterways are East Oakville Creek (PI-13N) and Sixteen Mile Creek (PI-1N).

URBAN DEVELOPMENT

Towns, villages and hamlets developed in response to the needs of the rural population to provide local commercial and industrial services and social amenities. Typically a 19th century rural community supported the services of general stores, blacksmiths and hotels. Occasionally a specialized establishment such as a cheese factory might be constructed to process local agricultural products. Larger

or specialized industrial activities, for example foundries and printers, were found in towns like Brampton and Milton.

Saw and grist milling were very important agricultural industries. Where possible water power was used and after 1850 steam power was sometimes used where water was insufficient. Often the establishment of a mill lead to the growth of a community. Fletcher's Creek in the LF-2N site vicinity is very small and apparently was never damed as a mill site. The closest mill site was Meadowvale on the Credit River. A woolen mill at Boyne (PI-1N) was apparently operated by steam power. Sixteen Mile Creek (PI-13N) was used for milling although no sites were noted in the site vicinity.

Schools and churches provided important social and educational functions in pioneer and rural communities. Typical examples were the former Boyne school (PI-1N, map #27) and the Bethel United Church (PI-13N, map #3) These facilities were built as soon as community could afford to construct structure. Other social meeting places were temperance halls and Orange Halls.

Within the LF-2N site vicinity was the small hamlet of Derry West. By the mid 1870s it consisted of two churches, a school, temperance hall, Orange hall, and post office.

On the eastern boundary of LF-2N was Palestine another tiny centre consisting of a hotel, church and school but no dwellings. A larger hamlet, south of the candidate site was Britannia which in the 1870s had a population of 100 and a blacksmith, wagon shop, school and church.

Still larger, was the village of Meadowvale just west of the site vicinity on the Credit River. A saw mill, built in 1831, marked the beginning of the community. This was followed in 1836 by two additional mills and the name Meadowvale was beginning to be used. The firm of Gooderham and Worts acquired a mill in Meadowvale in the 1850s that assured the community's prosperity for a while. By 1855 the village had a population of about 200. The community was sufficiently removed from the Grand Trunk Railway to be unaffected by the railway's construction in the 1850s. However, by the time the Credit Valley Railway reached Meadowvale in 1879, the railway was too late to help foster growth. Brampton had become well established as the major regional centre. The community peaked in growth in the 1860s - 1870s and remained a service centre into the twentieth century. Today Meadowvale has the distinction of being Ontario's first heritage conservation district.

The important town near LF-2N site vicinity was Brampton, about five kilometres north of the candidate site. In addition to being a railway town, Brampton also was the county seat and had a population of 2,500 in the mid 1870s.

Within the vicinity of the LF-4N, PI-1N and PI-13N sites were three small communities. Drumquin contained a blacksmith shop, post office and hotel in the 1870s. Omagh at the same time boasted a population of 100 people, three churches, a temperance hall and a "drill shed". This community is still visible today as a cluster of buildings. The hamlet of Boyne has a post office, blacksmith shop, wagon shop, two churches, a school and a woolen mill. This hamlet is also still visible today, although less prominent than Omagh.

The important town near the candidate site was Milton. Although it did not obtain a railway connection until 1880 it became the largest regional centre and boasted 1200 people by mid 1870s.

In keeping with the general prosperity of the counties, many of the residences were well built. In 1880 it was reported that 75% of all houses in the townships were brick, stone or "first class" frame houses. The remaining 25% were "second class" frame or log cabins. The report of the large percentage of good housing was supported during the field work stage of this report. Most of the housing stock still in existence consists of attractive brick or frame structures.

POST 1900 DEVELOPMENTS

Population in the townships and communities increased slowly but no major changes occurred in the agricultural economy until the Second World War. Wartime demands for industry began the first tentative steps towards urban development. The first signs of the new change were usually strip residential development were a farmer severed off land. One example is found along Britannia Road between Drumquin and Omagh. Within the Milton sites and particularly LF-4N, the trend has continued in the form of estate residential lots.

Large subdivision developments that characterize urban areas have not occurred in the site vicinities although they border some of these areas.

Much of the rural landscape has disappeared within LF-2N. Farms, farm buildings and a rural landscape are still common in the Milton sites. Hamlets, such as Omagh have retained some of their rural character.

TRANSPORTATION

The original survey of Peel and Halton Counties created long, narrow, concessions in the site vicinity. The road pattern produced by this survey is still visible. Within the LF-2N site vicinity, Hurontario Street (now Highway 10) was the principal road running from Lake Ontario at Port Credit across the County. It forms the western boundary of the candidate site. In 1853 the road was planked from Snelgrove to Port Credit in an effort to improve the abysmal conditions of roads. Today Highway 10 and Derry Road are four lane highways with no vestige of their 19th century origins.

Highway 25 forms the eastern boundary of PI-1N. The road opened in the 1820s, was known as the Bronte Road. Trafalgar Road was opened in 1835 and planked in 1850.

During the 19th century, rural roads were often lined with trees. In summer, trees provided shade for horses. During the winter, they caused snow to accumulate to help sleding. A few sections of such road plantings still remain as in one section of Appleby Road.

Roads in general were very poor and not useful for long distance transport. Major improvements only occurred in the early 1900s as a result of the development of automobile transport. Increased use of the automobile during the twentieth century lead to the creation of trunk super highways. Highway 401 was completed in the early 1950s along the southern boundary of the LF-2N site vicinity. East of LF-2N, the first lanes of Highway 410 were built in the early 1980s. This future super highway follows farm lot lines along the middle of concessions.

Until the automobile became common in the 20th century, railways were the only economic means of long distance transport. When railways appeared in the mid 1850s, fast, reliable transportation was available for the first time on a year around basis. The railway era in northern Halton and Peel occurred with the arrival of the railway through Brampton in 1856. For the first time year around, fast, reliable transportation was available. The railway was part of the mainline of the Grand Trunk Railway from the Atlantic Ocean, via Montreal and Toronto to Detroit. Thus from an early settlement period, the site vicinity was close to excellent transportation both locally to Toronto and nationally to all important centres. The Grand Trunk is now part of the Canadian National.

A second railway was the Credit Valley completed through Brampton in 1879 and Milton in 1880. The line was projected as a local railway to tap Toronto's hinterland.

However, the company was never very successful and was acquired by the Canadian Pacific in 1883. The railway is now a Canadian Pacific branch line.

A third railway through the area was constructed by the Hamilton and North Western. This line forms the western boundary PI-1N. The line was completed in 1878 from Hamilton to Barrie. Later the company became part of Northern System and then Grand Trunk. For many years a branch line and almost abandoned in the 1960s. The Canadian National revitalized the line in 1960s as part of a Toronto by-pass project and today the route is a major rail corridor.

An electric interurban railway, the Toronto Suburban Railway, skirted the LF-2N site vicinity through Britannia and Huttonville. The company was built in 1917 and abandoned in 1931.

SUMMARY

The 1870s and 1880s were the peak of rural expansion in the site vicinities. For almost another 100 years there was very little change in the settlement and economic patterns. Thus the important historic era pre-dates the 1890s.

Until World War Two the land use of the site vicinities was typical of rural southern Ontario. Small hamlets such as Derry West, Drumquin and Omagh were surrounded by active, small farms.

Since World War Two, and particularly since the late 1950s these rural areas have been influenced by the rapid development between Hamilton and Toronto. The area of LF-2N is rapidly being engulfed by urban development.

The Milton area, being further from Toronto, still retains a rural character. Even here it is tempered by residential pressure.

3. WEST LINCOLN - CITY OF NIAGARA FALLS SITE VICINITIES

SETTLEMENT HISTORY

Pressure to open the Niagara Peninsula to settlement came from the influx of Loyalists in the 1780s and 1790s during and after the American Revolution. Therefore the counties contain some of the earliest settlements in Ontario. Some settlers arrived even before land acquired by Crown and were, in effect, squatters. For example the first recorded settler in Crowland Township dates from circa 1778. But early initial settlement did not mean rapid growth. Crowland

Township, for example, still had only 216 settlers 25 years later.

Throughout the Niagara District, the War of 1812-1814 had been a major deterrent to settlement. The last major skirmish of the War happened at Cooks Mills in October, 1841. This has been commemorated with a monument (LF-1E, map #44). The damage of War and subsequent fear of border living had a deadening effect on settlement. The 1837 Rebellion and Fenian Raids in the 1860s did little to diminish this fear. Consequently, settlers were reluctant to make major improvements to their properties as found further inland.

Despite the limits to border living, by the 1850s most of the land was settled. Thus settlement of Halton and Peel counties was completed at about the same time as in the Niagara District even through the process had begun in the latter district twenty years earlier.

Although there are some accounts of good farm land in the Niagara District, neither Crowland nor Gainsborough townships were particularly well endowed. As early as the 1840s there were reports of land already "worn out" by poor farming practices. A report in 1880 indicated that Gainsborough Township contained only 17% "first class land" but 50% second class land and 33 % third class land.

Part of the settlement delay in Crowland Township was due to a large tamarack swamp in the middle of Willoughby Township. The swamp created a barrier that cut off most of Crowland from the Niagara River.

The first market oriented agricultural period, similar to Peel and Halton Counties, was a wheat growing era lasting from the 1830s until the 1860s. During the 1850s a transition began into other types of farming. Soil exhaustion and disease led to better agricultural practices and the collapse of wheat prices also helped to encourage diversity. Fruit growing in Niagara was one crop that developed. The climate was appropriate and the development of railways allowed fresh fruit to be shipped to distant markets. This farming occurred below the escarpment and outside the site vicinity. Crowland and Gainsborough Townships in the 1880s were still primarily grain producing areas.

This agricultural setting remained until post war urbanization.

URBAN DEVELOPMENT

Throughout the counties towns, villages and cross road hamlets gradually grew. These communities provided local commercial and industrial services and social amenities. Typically a 19th century rural community required the commercial and industrial services of general stores and post offices, blacksmiths and hotels. Sometimes a specialized industry such as a cheese factory might be constructed to process local agricultural products. Larger or specialized industrial activities, for example foundries and printers, were found in towns such as Welland.

Saw and grist milling were very important agricultural industries. Where possible water power was used and after 1850 steam power was sometimes used where water was insufficient. A mill established on Lyons Creek in the early 1800s lead to the growth of Cooks Mills. The Welland River was a substantial source of water and a mill site was established at Wellandport.

Schools and churches provided important social and educational functions in pioneer and rural communities. These facilities were built as soon as community could afford to construct structure. For example, the substantial brick building of Lyons Creek United Church in LF-1E (map #34) was completed in 1861. Other social meeting places were temperance halls and Orange Halls.

Within the LF-3C site vicinity was the small "cross roads" hamlet of Elcho. By the mid 1870s it had a church and post office. Schools were located one concession east and south of Elcho. The community is still visible today although most of the buildings date from the twentieth century. No community has ever existed within the LF-9C site vicinity.

A larger hamlet, Wellandport lay between LF-9C and LF-3C. It contained 200 people, three hotels, a blacksmith, two churches, a saw mill and a fair ground.

Large communities were not close. Dunnville lay to the south and Welland to the east.

Within the LF-1E site vicinity is the village of Cook's Mills existed. A saw and grist mill were established circa 1809-1810. It main claim to fame was the Battle of Cook's Mills on October 29, 1814. The PI-27E site vicinity did not contain any communities. The cross road at Chippawa Creek Road and Montrose Road was known as Montrose. But the area apparently never contained more that a store and a hotel.

As settlement became more established, more attention could be spent to living accommodations. By 1880, Gainsborough Township by one report contained 66% brick, stone or "first class" frame housing. Crowland contained 62% of similar housing stock. This level was less than in Halton and Peel Counties. The field work for this report concluded that the quantity of fine housing in the Niagara site vicinities. was less than in the Halton Peel area and may suggest the lower quality land and distances to markets of the Niagara sites.

POST 1900 DEVELOPMENTS

There has been almost no change in the land use of the West Lincoln site vicinities. LF-3C contains a small, post 1950s subdivision but otherwise the area is exceedingly rural.

The LF-1E site has also seen relatively little urbanization. Some farms have been spoiled by becoming automobile junk yards. There has been some urban residential development. But no industrial or large scale commercial developments have occurred.

The PI-27E site is somewhat rural in the south but along the Welland River has become somewhat industrialized. Factories have been built on both sides of the River including a massive Cyamanid factory. The north side of the river contains large tracts of undeveloped industrial land and subdivisions. Another prominent feature is the Ontario Hydro power canal. This channel, completed in 1921, draws water from the Welland river to the Adam Beck generating station.

TRANSPORTATION

In addition to being sources of power, rivers were often the first means of access into the interior. The desirability of locating along a river can be seen by the early houses that are found along Lyons Creek and the Welland River in the site vicinities. The Welland River was deep enough to be navigable to for small steam vessels during much of the 19th century and Wellandport was at the approximate upstream end of river navigation.

Although road construction was part of the settlement process, most 19th century roads were inadequate for long distance travel. The quality of the roads is still visible in several trails and closed roads that exist, particularly in the LF-3C site vicinity. Within the LF-9C area several of side roads were never opened.

It was only with the coming of the automobile in the early 20th century that roads were improved and that road travel became significant. Road travel increased rapidly and the first limited access highway in Canada, the Queen Elizabeth Way was completed from Toronto to Niagara Falls in 1939. The section from Niagara Falls to Fort Erie through the PI-27E candidate site was not completed until 1956.

The important 19th century form of transportation was railways. Because the Niagara Peninsula was a gateway for east-west American rail traffic, the area contained an inordinate number of rail lines. Early railways were built in the 1850s but they ran north and south of the site vicinities and had little impact.

In 1873 both the Great Western (today Canadian National) and the Canada Southern (today Conrail) built parallel lines just south of the site vicinity. In 1883 the Canada Southern completed a branch to Niagara Falls which cuts through PI-27E. In 1971 part of this line was abandoned due to construction of the new Welland Canal and a new line built which forms part of the boundary of LF-1E.

The Toronto Hamilton and Buffalo completed a line in 1896 from Hamilton to Welland past site LF-9C. In 1915 the company completed a branch to Port Maitland that crosses site LF-3C.

SUMMARY

The sites in West Lincoln have maintained a rural agricultural setting, little changed from the turn of the century. There appears to be little urban pressure that will cause a change in land use or development trends.

The LF-1E site although close to the cities of Welland and Niagara Falls has maintained a rural appearance. The PI-27E site has already undergone large scale industrial development and because of the vacant land available appears to be continuing in this direction.